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ABSTRACT

This book considers the basic principles and suggested criteria for dealing with educational innovations. Points discussed are a) new forces in curriculum making; b) the impact of federal programs on the curriculum; c) decision making in relationship to grants and negotiations for curriculum change; d) the effect of media, militancy, and protest on curriculum; e) the changes in leadership and teaching roles; and f) the consequent responsibilities of those charged with curriculum improvement. In the appendix are "Criteria for Selecting Innovations" and "Working With Groups and Individual Teachers to Improve Instruction." There is a bibliography and index. (JB/CL)

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CURRICULUM GUIDELINES IN AN ERA OF CHANGE

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To my

GRANDCHILDREN

who will live in a technological age hopefully made more human by dedicated and understanding teachers and curriculum leaders.

PREFACE

In the Second Edition of my book, *Principles and Procedures of Curriculum Improvement* (The Ronald Press Company, 1965), I wrote: "The ferment in curriculum change is undoubtedly one of the more significant trends in education today as well as in the foreseeable future." The past four years have witnessed an increasing tempo of curriculum innovations and a growing power of new forces demanding change in both the process and the product.

During the past few years, I have talked to supervisors, administrators, and other curriculum leaders in Louisiana, Texas, Oregon, Pennsylvania, New Jersey, Illinois, Rhode Island, Maryland, Puerto Rico, and Jamaica about the import of these changes and the problems such leaders face as a result. These curriculum leaders are concerned about the new forces and how to deal with them.

This book is an outgrowth of these meetings. It includes a number of the addresses given and enlarges upon some of the more pertinent discussions in my curriculum book. Its unified theme is how to deal rationally with the new forces and innovations. Since it is in the nature of "talks to supervisors," the style is informal.

The guidelines are basic principles and suggested criteria for dealing with innovations. The concerns center around the new forces in curriculum making, the impact of federal programs on the curriculum, decision-making with regard to grants, negotiations for curriculum change, the hazards of rapid change, the effects of the new media, militancy and protest in relation

to curriculum revision, the changes in leadership and teaching roles, and the consequent responsibilities of those charged with curriculum improvement.

This book is intended to be used by the large and growing number of supervisors and other curriculum leaders and in courses in curriculum and supervision as a supplement to basic texts. With the advent of programs such as Head Start, schools have found it necessary to equip new supervisors to lead such programs. The book will be useful in the in-service courses and workshops in school systems intended for this purpose. In my conversations with school leaders throughout this country and in other countries I have found them not only concerned with the new forces at work but eager to deal with them constructively and intelligently. No one knows the best solutions in a changing era, but the tenets of a democratic society, its working processes, and its concern for each person as a unique human being furnish the best clues.

I wish to express my acknowledgment and appreciation to curriculum leaders in public schools, including the increasing number of teachers who share in that leadership. They are both my friends and my teachers.

VERNON E. ANDERSON

College Park, Maryland
December, 1969

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CURRICULUM GUIDELINES IN AN ERA OF CHANGE

Chapter 1

THE PROBLEMS FACED BY SUPERVISORS AND ADMINISTRATORS

As the studies of innovation make abundantly clear, change is never easy. It is often accompanied by revolution, genuine or illusory, frustration, aggressiveness, or even fanaticism of the rankest kind. Fanaticism may take several forms but all types are intolerant of the other person's point of view or rights, no matter how "right" the cause may seem. Riots or milder forms of militant student protests which seek to prevent the other's point of view from being heard are shades of fanaticism. Self-proclaimed virtue of a private conscience may be of the most dangerous kind.

THE ADMINISTRATOR'S DILEMMA

But this is the atmosphere in which supervisors and administrators find themselves today. Acceleration of change is witnessed on every hand. The school administrator, who is one of the most powerful change-agents for the school curriculum, is faced with the fact that he must help speed up change at the same time when he is helping the total staff deal with changes already upon us. He is faced with both the activists and those demanding a crisis approach, both of which may be sincere in

their beliefs or may be protesting merely for the sake of the act.

This kind of dilemma makes the school leader even more vulnerable. Communities can turn on him almost overnight. Teachers become more isolated and estranged from him. In fact, the most respected and beloved leaders may suddenly find themselves the symbol of resistance to change or scapegoats for intolerance of the establishment or for the lack of "improvement," never quite clearly defined. Something *should* happen. We ought to be on the move in this school district or institution.

Witness the number of superintendents of large cities and presidents of universities who have gone under in recent years. The rank-and-file supervisor or administrator is no less affected by these social upheavals and forces, even though less dramatically or perilously. It is usually the baseball manager who loses his job if all is not well. Witness also the number of department heads and deans in college who have "gone back to full-time teaching and research," a most telling phrase oft-repeated in the professional news today.

To aggravate the quandary in which the leader finds himself, the reactionary forces—always powerful drawbacks to change—are strengthened by excesses of the fanatics for change, who would move even faster than social forces permit. Fanatics of another sort, typified by the book-burners, would stymie change by any means at their disposal. Both types, of course, eat out the very roots of democracy and democratic institutions.

THE DEMANDS ON CURRICULUM DEVELOPMENT

None of the social, political, and technological forces tugging for change, nor the psychological or political forces on the other end of the rope, make curriculum innovation any simpler or any more desirable. But they do present two demands. One is to look at process for change, and—even more important—what happens to people in the process; the other, to evaluate the product—with greater care than we school people have done before. What does the new mathematics consist of in terms of learning of the behavior of mathematics? Does it improve the chances of children learning behavior that is significant in the modern

world? Of what good are social studies, or for that matter any other subject field, unless they are relevant to the present-day society? Yes, even more so, relevant to the *future* society of youth as well as to dealing with problems that they now face.

The day-by-day problems and irritations of dealing with the guidelines for federal grants, the frustrations of budget cuts and the demands of federal agencies for certain kinds of innovations, loom as great obstacles to the supervisor's and curriculum director's desire for curriculum improvement. However, these irritations or temporary setbacks need to be placed in their proper perspective. Although they may seem farther removed, the forces typified by militancy or Black Power or by the struggle for freedom of all peoples or by a desire of people to live in peace or to be human, are far more potent and significant. They are most closely related to the problems of the survival of the human race, which in turn is one of the urgent questions with which a curriculum suited for a technological age must deal.

THE STRUGGLE TO BE HUMAN

In this race to be human and at the same time to survive, acceleration of desirable innovations in the schools will have a large part. The sharing by teachers and students in the policy-making process and the widening of the curriculum decision-making process are a part of the minimum essentials in the future of curriculum development. We need to recognize the power of the teaching profession and use it to good ends. Administrators and supervisors need to support it actively, or we may end up with as autocratic a structure for decision making as we have ever had, because few teachers will be involved—and even a smaller proportion of administrators.

Without a doubt the new forces such as militancy pose an imminent threat to the authority and the very positions which administrators and supervisors occupy. This is not the least of the school leader's problems, for he may end up as an impotent adjunct in the curriculum-making process. Only through genuine sharing of the decisions in the process with others concerned can he hope to retain his influence. For a leader who knows the

answers or makes the decisions for others fits the modern acceleration of change like an obsolescent spare part. This is what the curriculum improvement process is all about.

The following chapters take a look at the future world in the context of the changing present, address themselves to the dilemma in which the administrator or supervisor finds himself amidst change and innovation pushed by outside forces, and speak to those striving to be human "in the grants rat-race," a symbol for all that innovation in curriculum implies.

Chapter 2

STRANGE FORCES IN CURRICULUM MAKING

Having lived through some three decades of curriculum work with the public schools and universities, I am keenly aware that things have changed. For the first time, we have had serious money problems. You know the familiar Biblical statement: "It is easier for a camel to go through the eye of a needle, than for a rich man to enter the kingdom of heaven." The bonanza of federal funds often appeared to be the needle's-eye variety. The restrictions and conditions under which they were granted and the uncertainties of the funding did not exactly make them an unmitigated blessing that led to the promised land.

We were like the new rich who scarcely knew how to spend the money available to us for curriculum projects. For years, we had labored along with only a pittance of the local budget available for curriculum study; none for curriculum experimentation. In the years that I served as curriculum director of a public school system and of a state department of education, I did not have a penny available for innovations. All of a sudden grants became available for research, experimentation, dissemination, and demonstration of curriculum innovations. The trouble is that in order to get these funds we had to become involved in a gigantic grants rat-race which consumed much of our time in the process.

Where will the race for grants take us? Will our effectiveness as school leaders be measured by the amount of grant funds we can secure or by leadership given to sound educational change? In university circles, the institutions with the largest and greatest number of grants are—or soon become—the ones with the greatest prestige. They can make the highest bids for the most outstanding name professors.

Who cares whether or not the program for which the funds are to be spent is a part of long-range curriculum planning, or whether it is for science equipment, new libraries, special education, Upward Bound, international education, foreign language laboratories, or the culturally deprived? Don't we need money for all of these? "Damn the curriculum; full speed ahead!"

Yes, there are strange forces abroad in curriculum making. There has been a drastic change in the decision makers for curriculum change. We may not like what is taking place: a new powerful federal Office of Education, the obvious federal control that exists in the various education acts, and the entry of industry into curriculum development via the new media. But, like it or not, I believe that we have to learn how to live with these strangers. Could it be that we are the ones who will have to change in our ways in order to function differently in our roles as supervisors or administrators?

We note in Chapter 3 that the human factors probably are more central than the monetary ones in curriculum innovation. The problem becomes one of essentially retaining the human touch among the pressures for more rapid changes and decisions for change made elsewhere.

THE FORCES

All of these forces represent a widening involvement in the curriculum-making process, including teachers, students, community groups, scientists, government officials, psychologists, and other specialists in the disciplines, in curriculum designing, and in research. Other forces, such as computer-based instruction and pre-packaged instructional media are discussed in Chapter 4.

1. The Federal Government

The most potent of these new forces is the federal government. Just a few years ago, the NDEA Act was passed (1958) under the guise of contributing to the national defense instead of to the national social welfare. After that have followed numerous acts all of which have provided funds for specialized or particular aspects of an educational program: The Higher Education Facilities Act, the Vocational and Technical Education Act, the Manpower Development and Training Act, the Mental Health Facilities Act, the Economic Opportunity Act, the Civil Rights Act, the Elementary and Secondary Education Act, The Higher Education Act, The Adult Education Act, the Library Services and Construction Act, The Cooperative Research Act, the National Arts and Humanities Foundation Act, the International Education Act, the Education Professions Development Act, and others. Most of these were enacted within a three-year span.

It is important to note that every one of these acts providing federal aid to education makes funds for equipment, buildings, fellowships, programs, research, or teacher education available either in specified fields or within specified conditions that tend to control what emphasis will be given in curriculum or research. Consequently, there has been a shift of power from local and state agencies to federal agencies. State departments of education were by-passed in many of these acts. All of them carried the stamp of the Smith-Hughes and other vocational education acts in which the federal government, on a minor scale, had long been a curriculum maker. Local-state-federal relations in education will never be the same as they were before these acts were passed. All of a sudden, the federal government expanded into curriculum making as a major enterprise. Discussions regarding the power of the United States Office of Education have become largely academic.

It is well to remind ourselves of two notable things that have happened: 1) the U.S. Office of Education and other federal agencies administering these new programs have had a difficult time finding qualified staff in such a short time; 2) these programs

have provided little time for preparation of plans and proposals; hurried preparation and fast administration have been the watchword. They have often been in the nature of crash programs.

2. National Assessment

National assessment is one of the ways by which the federal government enters into the curriculum picture, but it is a separate force influencing the curriculum, related to all types of nonlocal testing programs. External standardized test programs of various kinds have proliferated in the past few years. The impending assessment on a nationwide basis is a new issue which threatens us because of two factors: 1) our experience with state testing programs and 2) our suspicions of what use the federal government might make of these tests. It is an issue hotly debated in educational circles.

What is the background of our suspicions? Brickell, in his survey of education in New York State, made the statement that copies of the Regents Examination "constitute at least ten per cent of the typical high school course." [1] The experience in Minnesota under the state examination system up to the middle 1930's was the same. I lived through this period as a beginning teacher in that state. Whereas later I have come to believe and understand that evaluation follows rather than precedes the establishment of objectives, I then did exactly what I am sure most teachers did: reviewed my classes on booklets made up of previous state examinations. They were a most potent force in determining the curriculum. Schools were compared with schools, school systems with school systems, teachers with each other.

Ralph Tyler and others who are the proponents of national assessment have assured us, however, that this will not happen, that the purpose is to assess nationwide educational performance for research purposes and to acquire needed information to determine strengths and weaknesses. Assessment will focus on differences such as those in geographical regions, socio-economic

[1] Henry M. Brickell, *Organizing New York State for Educational Change*, Albany, N.Y.: State Department of Education, 1961, p. 40.

status, rural-urban, sex, and age. The Commissioner of Education at one time indicated that such data would be used to determine where to put federal funds. He pointed out that some of the new federal education acts require such assessment.

The crucial question is: What will be assessed—social, emotional, artistic, appreciation, and health goals as well as skills and intellectual goals? The issue is whether or not national assessment can be carried out without undesirable results of comparing teachers and school districts, and guaranteeing the uniqueness of students, the diversity of communities, and local autonomy.

To go about the country railing against national assessment is undoubtedly good politically but certainly poor educationally. It reminds me of the tent evangelists who used to come to our small town, warning of impending doom because of the follies of youth. To speak against what is now an accomplished fact tends to put any organization or group on the defensive against the gathering of information to solve educational problems. This is a curriculum force to be reckoned with. Let us, then, reckon with it in a rational manner, helping to see that the intended purposes are carried out and that it will be broad assessment of all educational goals. If the Educational Testing Service, the Psychological Corporation, the American Institute of Research, and the Science Research Associates through their combined efforts can come up with evaluative measures for some of the more elusive objectives, our gains in curriculum will be substantial. I commend to you the ASCD's statement on this issue.[2] It seeks to guide this new curriculum force, not to stem it.

3. Academic and Scholarly Organizations

The 1965 ASCD publication *New Curriculum Developments*[3]

[2] American Association of School Administrators and the National Education Association, *National Educational Assessment: Pro and Con*, Washington, D.C.: NEA, 1966, pp. 54–56.

[3] Association for Supervision and Curriculum Development, NEA, Washington, D.C.

See also Glenys G. Unruh and Robert Leeper. *Influences in Curriculum Change*, Washington, D.C.: Association for Supervision and Curriculum Development, 1968, 116 pp.

lists over 100 curriculum projects in the arts, English, foreign languages, health and physical education, mathematics, science, social studies, and vocational education. New ones are constantly being established. Many of these are sponsored by academic organizations or have involved professors in those fields. The fact that these organizations have become a new force in curriculum making is a sound development but one for which we were unprepared. For years we had bemoaned the academic disciplines' lack of interest in the public school curriculum. We recognized long ago that their expertness was needed in revising content and that the psychologist, the sociologist, and the anthropologist were also needed in curriculum development. Yet, in the curriculum field there was great concern that these strange innovators would now take over our proper function as school leaders. As if we had ever been able to do the job effectively alone!

Conditions now were ripe for the new curriculum maker to assert himself. He had been somewhat of a force in that he had often written textbooks used in the public schools. With the increasing complexity and speciality of knowledge and with the information explosion, it became imperative that this expert help to revise outdated content. Yet, lo and behold, he did more than that! He advocated such ideas as the educators had talked about (in other terms to be sure), such as discovery, experimentation, stressing meaning rather than rote learning, dealing with larger concepts and relationships, communications, inquiry, and intellectual excitement.

These are indeed promising forces if we are flexible enough, creative enough, to team up effectively with them. The future curriculum developers will undoubtedly be teams of educators, academic scholars, behavioral scientists, and research specialists. As educational leaders, we have know-how both in the process of teaching and in the processes of supervision and curriculum development that are most essential to such a team. We ought to be the leaders of it.

This development also indicates that much of curriculum development will be done on a regional and national basis in the future. Participation in curriculum making at the local level

becomes of a different kind. The day of writing courses of study at the local level is over. If we do not recognize this fact, we will be doing a lot of peripheral tinkering instead of getting at the more fundamental problems of evaluating materials, working in experimental and pilot programs, serving as demonstration centers, working with teachers in-service to assist them in utilizing effectively the new programs and the procedures advocated.

4. PHILANTHROPIC FOUNDATIONS

The foundations, such as Ford and Carnegie, are a somewhat earlier force in the curriculum field. Through their support of selected programs, team teaching, television, flexible scheduling, teacher aides, and staff utilization they have influenced the direction of teaching procedures and organization for teaching. Ordinarily, their programs have not been genuinely experimental since little evaluation or research accompanied these changes. In the areas promoted by the foundations, schools have been most susceptible to the temptation to innovate for the sake of innovation.

5. INDUSTRIAL CORPORATIONS

In the summer of 1966, it was announced that Francis Keppel, former U.S. Commissioner of Education, would direct the General Learning Corporation, an educational systems firm which was formed by General Electric Co. and Time-Life Inc. It is one of the several such unique corporations recently organized to do research and development work in the field of electronics, combining the technology and data processing with publishing into powerful giant companies. Science Research Associates has combined with IBM; Xerox acquired American Education Publications and University Microfilms to form Basic Systems; Random House has combined with RCA; Litton Industries has employed specialists to produce curriculum materials. Other industries have gone into the education business.

That these groups will be powerful forces in curriculum making can be rather safely predicted. The U.S. Office of Education is now awarding research and development contracts to private

industry. If the new technology, which through computer systems is capable of providing for individualized instruction, is supported to the extent that seems to be apparent, the changes in curriculum development will be radical indeed. Pre-packaged materials and automated systems will further remove curriculum making from the local schools.

6. Quasi-Government Regional Agencies

Tied in with the previously discussed forces is another type of innovation in curriculum making which may supplant this function of state departments of education and carry the brunt of educational research in cooperation with schools, universities, and industries. This is an evolvement typified by the R and D Centers, the Compact on Education now known as The Education Commission of the States, and the Regional Educational Laboratories. Oddly enough, although supported by the federal government in two of these instances, these agencies represent a counteraction to the growth of federal power in education. The interstate compact or regional organization may become more influential than individual states in making changes in education. It is inevitable that a regional agency with funds and governmental support will weaken state lines and threaten existing power in policy-making.

The Regional Laboratories will be involved in research, experimentation, dissemination, demonstration, and innovation. Some of them envision themslves as in-service education agencies. Unless the schools and universities can effectively link themselves with these laboratories, we will see them draining off some of our best professional talent and operating apart from us. Rather than see this occur by default, I recommend that we actively seek ways in which schools and universities can jointly employ staff with the Laboratories or arrange leaves for staff to work in them.

7. The Radical Right or Left

Whether a group that wishes to influence the school program is pro-Communist or pro-Fascist makes little difference; its objectives and methods will be much the same. All such groups

would limit the teacher's freedom to teach. They demand censorship of textbooks and labeling of library books, use investigating committees, criticize liberal-minded teachers, all deliberate means of bringing about conformity. In some states, they have been successful in purging libraries, causing withdrawal of standardized tests, distributing lists of objectionable books, influencing boards of education to change book adoptions. They are not exactly new, but their stepped-up activities and their use of radio and television to propagandize for their ends make them potent forces which cannot be ignored.

8. Collective Negotiations

There is no doubt that a new force in curriculum decisions is the process of collective negotiations between teacher groups and the school board and administration. Teachers are demanding not only better working conditions but also more power in the decision-making process regarding their professional lives. Success in negotiating contracts for better salaries and other welfare benefits has led teacher groups to broaden the scope of negotiable items into curriculum and closely related instructional matters such as team teaching, scheduling, and use of teacher aides.

One can easily understand why teachers want to move into negotiating curriculum decisions, for in too many instances they have had little to say about curriculum policy or development. The author has for years advocated extensive participation by teachers in curriculum making at the classroom, the local school, and the school system levels—not just the play-acting variety typical of student councils.[4] Yet, a large school system just recently publicized widely its organization of a central system-wide curriculum council staffed by central administrators, supervisors, and principals, with not a single teacher on board!

A process that is a matter of changing people, changing attitudes and skills cannot be negotiated over the bargaining table. The purpose of curriculum improvement was never to make the

[4] Vernon E. Anderson, *Principles and Procedures of Curriculum Improvement.* New York: The Ronald Press Co., 1st ed., 1956, 456 pp.; 2nd ed., 1965, 498 pp.

teacher's job easier but only to improve children's experiences. The newer favorable developments in curriculum—experimentation, evaluation, and research—would suffer a severe setback if negotiations of curriculum programs should gain ground.

Bishop made a useful distinction between policy-process and program decisions.[5] Teacher groups might well negotiate for a part in the policy-making process, for funds for curriculum development and in-service education, and for time for curriculum study. These are the conditions and policies under which curriculum study and improvement of program can occur.

One of the serious problems affecting the curriculum process is the breakdown in cooperation that results when teacher groups align themselves against administrators and supervisors. The basis of curriculum improvement at the local level is a closely knit team of principal and teachers working together on curriculum in the school building, aided by supervisors or consultants.

The negotiation procedure, in which a small group of teachers at best—or often an outside negotiator—carry on negotiation, is a far cry from cooperative group work. It is not interaction except on a very limited scale. Conflict, not cooperation, is an essential ingredient, accompanied by legalization and formalization. Ironically, the procedure may lead to as much centralization and as little participation for the rank-and-file teachers as in any autocratic school administrative system.

Elsewhere, the changing process of supervision is discussed. When the teaching profession through its organized groups assumes the responsibility that it should for evaluating competence of teachers and for policing the profession, the supervisor no longer will need to devote time to the onerous task of rating teachers that tends to make him ineffective. Moreover, teachers will in effect become supervisors of improvement of instruction.

[5] Leslee J. Bishop, *Collective Negotiation in Curriculum and Instruction: Questions and Concerns,* Washington, D.C.: Association for Supervision and Curriculum Development, 1967, 22 pp.

9. The Research Specialist

The increasing amount of funds for research projects in education and preparation in research has resulted in the development of specialists in research—both in colleges and universities and in public schools. A new breed of college professor of education is emerging, one who can assist people in designing research projects and evaluation of experimental programs.

No longer can curriculum change be as easily accepted on faith, for our colleagues will be challenging us to show why a change is superior. No longer will we be able to speak in general vague terms of the results that we achieve from curriculum revision, for we will be rightfully questioned as to what specific behavior changes are evident. More curriculum projects with built-in evaluation are bound to result from the increased emphasis on research.

10. Militancy, Revolt, and Black Power

Militant teachers demand a greater share of the decision-making process. College students and an increasing number of high school students demand more control of their institutional lives, more freedom, and more say in the institution's policy-developing process. Negro and other minority groups, especially the youth, demand a more equitable share of life's economic and social privileges and a more relevant curriculum in the schools located in their communities.

Protest movements, demonstrations, strikes, sit-ins, and even violence replace the milder and slower-paced forms of attempting to effect social change. To say that these movements have no effect upon the curriculum is to be blind indeed to what is happening. Sluggishly moving processes for curriculum change in a school or university, which occupy a year's time at the least, do not suit an age when other changes occur at breath-taking speed, nor impatient youth who seriously wish to change society and its institutions.

Black Power works toward including history, music, art, and literature of the black people in this country. Already high

schools and colleges have instituted such courses. More Negroes have been added to the faculty.

The use of power in the democratic process is not unknown, but it is obvious that these measures to speed-up change have given greater power to minority groups, even the "minority group" in schools, the students, who as minors have not been considered creative enough to make good judgments concerning the curriculum. Today in institutions all over the country, students serve on policy-making groups alongside of faculty.

THE HUMAN TOUCH IN THE GRANTS RAT-RACE

In this era of pre-packaged instructional programs and new forces demanding curriculum change, how do we retain the human touch, the interaction among people that we have found so vital in curriculum improvement? In the hurry-scurry of the daily scramble for federal grants, it is difficult for us to see what is human about the process.

In a period of curriculum change, traditional practices are likely to be regarded with suspicion. The school faculty that does not have some type of popular current innovation going, even though its program has continued to develop over the years as a forward-looking one, may wonder if it is moving in the right direction.

But what of the past? Were we all wrong—those of us who wrote about curriculum improvement—in the principles we suggested? Is there nothing good about the old ways? Probably one of the fundamental tasks is to sift out the aspects worth retaining. One of these certainly is the humaneness of the curriculum process, content, and product.

There are tested guidelines that I believe we should follow in making curriculum decisions. For decisions still have to be made, even though they may be of a different kind. I would suggest that we examine the principles by which we have operated to see which ones are still pertinent. Let me suggest some to you. These are of the people-to-people variety that concern teachers and administrators as human beings. Since they de-

rive their substance largely from the principles of democracy, they are still valid. If we lose sight of them, we will truly have lost our sense of direction. We can analyze what is occurring in the curriculum field against these more enduring ideals that deal with relationships among people.

1. *Curriculum change involves a change in people.*

I would put this principle at the head of my list. Any kind of so-called curriculum change that does not result in the modification of people's ways of thinking and doing is only illusory, imaginary. It is the kind that accepts the form for the substance, the hardware for the human.

True, funds that can help put an idea into practice are welcome. But money will not buy alterations in a teacher's values or ways of working, except for the opportunist who turns whichever way the windfall blows. In any of the new curricula or ways of organizing for instruction such as team teaching, the teacher has to be a part of the change-over. Unless he changes his ideas, improves his skills, and renews his knowledge, there is no lasting change.

2. *The curriculum can change only as fast as people involved are willing to change.*

Granted that teachers need to be a part of planning and making changes, they still cannot be pushed at a pace faster than their willingness to change the perception of their role. No one is going to change his ways of developing the curriculum in his classroom unless he perceives himself in a different light.

All the psychological factors in change still operate—lack of security and know-how, fear of change itself, adherence to outmoded values as *our* personal possessions. Yet, there are new elements which are catalysts for change; i.e., funds for equipment, for materials, for in-service education; the community's desire for more and better education; social and technological forces. Consequently, change can be speeded up, not beyond the capacity for people to change, but over the pace that previously had been set with lack of funds, lack of incentive, or lack of pressure for improvement.

3. *Group work on curriculum improvement is basic to assisting teachers in changing their procedures.*

Much research in industry, leadership training, and the changing of habits, indicates quite conclusively that when a group as a whole decides to change its course of action, individuals within the group are likely to go along with that decision.[6] When experimentation or innovation is attempted, a faculty group's decision to innovate is thus superior to the administrator's decision to make the change.

Group work creates situations in which there can be an exchange of ideas, in which one learns to respect the ideas of those with whom he works, and in which he finds leads for mutually helpful interchange of ways of improvement of instruction. If a curriculum leader works cooperatively with teachers on the study of some curriculum problem, he will find opportunity to visit classes, hold individual conferences, and discuss instructional problems with them.

Effective group work involves not only study but cooperative decision-making as well. Teachers need to have the central part in policy-development regarding the curriculum.

4. *Curriculum problems studied are those of concern to the group.*

The purchase of equipment may ostensibly help effect curriculum change, but it will not necessarily lead the teacher to use the equipment. I have seen too many language laboratories either utilized little or used in a thoroughly unimaginative way.

It would appear that with more so-called "canned" or "prepackaged" programs appearing on the market, there is less room for curriculum work on a school's own problems. Yet, are not the improvement of science, reading, or mathematics problems that concern teachers? Have not instructional materials such as books always been pre-packaged? Only in rare instances have schools written their own.

It is the utilization of *any* media—books or language labora-

[6] See Vernon E. Anderson, *Principles and Procedures of Curriculum Improvement*, New York: The Ronald Press Company, 1965, pp. 15–16.

tories—that is the crucial problem. Selections must still be made among the instructional programs available and teachers must develop ways of using them intelligently and evaluating their use. Faculties can still define their problems, develop significant issues and problems, and arrive at solutions to those problems—the basic setting for productive group work.

5. *Curriculum study should result in the improvement of pupils' experiences.*

No longer can the course of study be thought of as the goal. That is one blessing which new stimulation grants have brought. The basic reason for curriculum study is the improvement of pupils' experiences. Unless pupils have better intellectual experiences, creative experiences, experiences in being successful, in using their reasoning powers, in gaining skills, in understanding and coping with their world, in understanding themselves, in living with others, in examining values, there is no curriculum improvement. That has always been true and still is true today.

These principles still apply to curriculum improvement. Teachers still must change—take in-service courses (now we call them "institutes," for "workshops" no longer seem to be respectable), learn more than they ever did as a life-long process. Community involvement is still a powerful factor. Demonstration is as potent as it was in the laboratory classes in workshops. Changes in attitudes, values, and skills of those making curriculum changes must still take place. The new biology text is easier to adopt than the method of discovery. Accepting or adopting the former does not guarantee the latter. It is here where local curriculum work needs to put its emphasis.

If we neglect the application of the principles of good human relationships in our work with teachers, money available for supplies, equipment, research, and new programs will be of little consequence in effecting genuine curriculum improvement. The fact that different conditions exist does not mean that we tell teachers what to do, nor that the concepts of mutual growth, uniqueness of the individual, self-evaluation, freedom, and service no longer apply. No, these are the foundation-stones of curriculum improvement. We should adapt to the situation, not

submit to it. There is a tremendous difference, distinguished by good leadership.

Leadership for curriculum improvement at the local level as it works among the strange forces in curriculum making, needs to:

1. Cooperate on a state-wide and regional basis.
2. Work with academic and scholarly organizations and research agencies.
3. Insist on evaluation of experimentation in order to avoid the band-wagon approach.
4. Set up local policies as to how nationally produced materials shall be studied and their use determined.
5. Develop with institutions of higher learning in-service education programs in connection with the innovations.
6. Develop some plan of continuously gathering data in connection with any curriculum revision undertaken.
7. Help teachers study the teaching process.

Chapter 3

CHANGE AND ADOPTION OF NEW IDEAS

One could conclude from reading statements made by some educators that change is inevitable because billions of dollars are being funneled into school channels by the federal government. By itself, this is a rather poor reason for change; for if what we are now doing is good, why prostitute our beliefs through accepting federal funds for something possibly inferior?

You know, this is exactly the attitude taken by some staunch Republicans during the Roosevelt Administration. In spite of the availability of PWA funds for building schools, some communities refused to accept the "tainted" money. They were to be admired for having firm principles, but they failed to understand they were now living under extremely changed conditions. Those of us who lived through PWA and WPA days of the Great Depression can never adequately describe to others what those days were like. But we can now in retrospect better understand the fundamental social changes that were taking place.

The intensity of the transformation from a time of plenty to the uncertainty of the morrow and the very fear that the future held for the teacher—who was uncertain where his next meal might come from—were changes as great as those that confront us today. For those of us who hold a leadership position in education, the meaning of social change is most significant.

PROMOTING CHANGE

Today's accelerated pace of change has made local curriculum programs which focus on revising courses of study as outmoded as the steam engine. In addition, the new forces in curriculum making and the many new devices and programs appearing on the market make a continuing study of the curriculum necessary.

Like the county agent in the field of agriculture, the curriculum leader will be the change agent who encourages sound curriculum study. This means that he will be promoting curriculum change, experimentation, and evaluation rather than using the bandwagon approach for the sake of having something new.

Why Do We Need Change?

Why do we need to change? Not because the federal government provides the funds to do so. It is a simple, unequivocal fact that the curriculum programs that were suited to a relatively stable world are unsuitable to the present day.

But how do we select curriculum content for a future life when half of what a tenth grader needs to know when he finishes college has not yet been discovered? How do we prepare a child to live in an age of accelerated change, of discovery, and of uncertainty? I will discuss these questions at some length later, but here I want to stress that one of the most fundamental reasons for curriculum change is the uncertainty that lies ahead and the dire need to assure that the younger generation will have a future.

What Does Change Involve?

If we are going to help bring about change, we ought to be aware of what it means to a teacher to change. What does it mean to us? Let me illustrate with the concept of discovery that permeates so many of the newer curriculum programs in science, mathematics, social studies, and industrial arts. Surely, there is no more radical idea promulgated today in the realm of educational innovation than that pupils are to discover knowledge for themselves. Remember that most pupils are still being told what is known, told what is to be learned—because it says so in the book or the course of study, or because the teacher says so.

Now, all of a sudden the comfortable rug of the enduring and the permanent is being pulled out from under the teacher who talked, told, and "taught" with irrefutability. What the textbook says today may no longer be true next year. Children should learn how to discover knowledge. What a revolutionary idea!

Accepting the concept of discovering for oneself means a change in one's understanding of what teaching is, what the teacher does, how he approaches planning a lesson. It means a change in one's beliefs and values. It certainly means a change in one's perception of the role of a teacher. In fact, for many teachers it would mean a dislocation of their whole frame of reference.

How do we who are teachers help a teacher make such a change? By really accepting the concept ourselves through making it a part of our behavior, helping teachers to know how to use the discovery principle through using it in our own teaching or group work with teachers; by answering questions rather than asking them; by encouraging teachers to question the traditional and by listening more than we talk; by helping teachers to formulate problems and allowing them to seek for the solutions; by encouraging them to experiment; by being less rigid and more creative in our own dealings with people; by analyzing our own teaching process.

STUDIES OF INNOVATION

"Innovation" is simply another term for the adoption of a new practice. Actually, the studies of innovation have helped in clarifying the change process since they examine the time needed for innovations to take hold, the facilitating conditions, and the persons involved. How does innovation occur? Why are some school systems more successful innovators than others? What is the person who is an innovator like?

Curriculum improvement is innovation with built-in evaluation. It is trying out, experimenting, but with the attitude of a researcher who evaluates what he does and is willing to accept the results of what he finds. This is different from innovation for its own sake, for innovation itself has not necessarily meant appraisal.

The Pace of Innovation

We are concerned with both evaluation and the speed-up of the innovation process. Mort's studies showed that it took fifty years before a new educational idea was widely accepted.[1] Does it have to be this painfully slow? Driver training took about eighteen years. Modern mathematics has been fairly well accepted in five to ten years.

Let us look at the results of studies on the adoption of new ideas in agriculture, rural sociology, medicine, and other professions, including our own. I believe they give us some clues to speed-up of the process.

I would commend to you the studies of Richard Carlson and others in the Center for Advanced Study of Educational Administration, University of Oregon.[2] Educators, sociologists, psychologists, and anthropologists collaborated in the studies made in this Center.

Some of the problems of innovation that apply particularly to schools as found in these studies are:

1. There is a lack of a "change agent" or an advocate (county agent).
2. There is lack of knowledge about results of trial and experimentation.
3. The environment in a school tends to be stable and many factors work for this stability.
4. The most potent innovators are not always who they are assumed to be.
5. Teachers become isolated in their own school systems.
6. The leadership is unwilling to take the risks of innovation.

The old idea was that it took largely money to innovate. Mort's studies showed that the schools which spent the most per child had the highest rate of adoption of innovation.[3] Yet, there was

[1] Donald H. Ross (ed.), *Administration for Adaptability*, Rev. ed., New York: Metropolitan School Study Council, 1958, p. xi.

[2] Richard O. Carlson, *Adoption of Educational Innovations*, Eugene, Oregon: The Center for the Advanced Study of Educational Administration, University of Oregon, 1965, 84 pp.

[3] Ross, *op. cit.*, p. 15.

always the disturbing fact that some schools in poorer rural agricultural regions did some imaginative things and some schools in wealthy suburban communities coasted along in their self-satisfied ways. The most recent research in the adoption of new ideas shows that the expenditure level is not always a reliable indicator of the amount of acceptance of new practices. In fact, the *human* factors are more central than the monetary ones. Thus, as we could have suspected, it was the quality of leadership that made the difference in the rural schools and suburban schools which did not conform to the expected pattern.

Characteristics of Innovators

A look at what innovators are like may give us further clues as to innovation. In the studies, innovators have been found to be:

Venturesome
Generally young
Opinion leaders, sought frequently for advice
Persons who travel widely, getting information from sources outside the school
High in social status in terms of prestige and education
Usually more competent and have greater contacts with information sources
Persons who are viewed rather positively
More secure in their positions [4]

What do these characteristics tell us as supervisors? What can we do to become more effective innovators of ideas? We can become widely read on the latest trends and research in the fields or areas in which we work with teachers. We can continue our formal education. We can strive to be the flexible, "open" kind of person who is receptive to new ideas and to teachers' problems (I'm sure we have all known administrators who have such rigid personalities that they are disturbed even if they come to the office five minutes later than usual. To change their ideas con-

[4] Everett M. Rogers, "What Are Innovators Like?" in Richard O. Carlson and Others, *Change Process in the Public Schools*, Eugene, Oregon: The Center for the Advanced Study of Educational Administration, University of Oregon, 1965, Ch. 4.

cerning the curriculum would be a Herculean task indeed.) We can attend conferences, visit schools in other parts of the country, be willing to risk unfavorable opinions of some who view change with alarm, and keep ourselves young in heart.

What Do Innovation Studies Tell Us?

Other findings of innovation studies that I believe have meaning for administrators and supervisors are these:

1. *The position which the innovator holds in the social structure makes a difference.*

Carlson's studies examine particularly the social structure of a school system in relation to the rate of adoption. The superintendent was the leader upon whom these studies focused. It was found that the education, prestige, opinion leadership, and professionalism of the superintendent as judged by fellow superintendents had a direct relationship to the rate of adoption of innovations in his school system. The more ready adopter also more frequently sought advice outside his own immediate locality.[5]

These studies certainly suggest that the leader who wishes to innovate, that is, to make changes in curriculum and instruction, should be in a position of authority in a school system but an authority based on knowledge, competence, and skill recognized by those with whom he works. The leader does not need to function by the authority of power to judge and to demand, but power based upon recognized capability.

2. *Communication channels to sources of information facilitate innovations.*

Successful innovators have been observed to keep all possible avenues of communication open. Since advice is sought from those of higher status and since innovators often seek advice from those with whom they are in contact, it behooves supervisors to assist teachers in developing plans, dealing with strange courses, and working at their concerns—to be accessible to teachers. Rather than writing proposals and negotiating contracts, administrators and supervisors should be developing ideas with

[5] Carlson, *op. cit.*, Chs. 2 and 3.

teachers that can result in cooperative efforts for improvement, around which proposals might be developed. But the idea development should come first. Sadly enough, it is likely to be the other way around.

There are good and valid reasons why federal programs stress dissemination and demonstration. The innovation studies support the notion that the easily demonstrable practices are more quickly adopted. To demonstrate a practice is a way to disseminate it. We have long known that workshops which include demonstration classes are more likely to lead to teachers' change of behavior than those which do not. This is another effective way of communicating ideas.

One of the chief differences between innovations in agriculture, medicine, and industry on the one hand and education on the other is essentially the difference in communications: the array of publications, publicity agents, advertisers, and extension agents. The extension agent in agriculture, who has been influential in promoting changes in farming methods, is a part of a system of communications and consultants.

3. *Relationships of the advocate of innovations with others in the social setting help to determine the rate of adoption.*

Innovation studies show that people will more readily accept innovations which they have cooperatively planned and which they perceive as relevant. That sounds suspiciously like what has been known to us in curriculum development for some time: group decisions to accept change facilitate the individual's readiness to change. Successful innovators create a favorable climate for these fellow workers. Among the factors in such a climate is the willingness of the innovator to change. Surely, this is a maxim by which effective supervisors operate.

4. *People's resistance to the efforts of others to help them improve constitutes a major individual difference.*

Programmed instruction is one of the instructional media that has real possibilities for adapting the pace of learning to individual differences. At the University of Maryland, learning

studies made in connection with our modern mathematics project (UMMap) showed that slower students learned modern mathematics as well *up to a point* as did the faster students, for they could pace themselves in their learning. The typical situation in a classroom is that the slow learner tends to fall farther and farther behind until he no longer understands the instruction being given. In a study of the adoption of programmed instruction, it was discovered that some teachers were holding back the pupils who were proceeding at the fastest rates.[6] Teachers in the study restricted the pace of faster learners and gave slower students more time to work on programs, tending to minimize the spread of progress.

Even the principals in some cases in this study of programmed instruction as an innovation resisted the change because they could not supervise the classroom in the usual manner! At the same time as supervisors help teachers innovate, they need to examine their own practices to see what changes are necessary.

Such a practice raises some rather serious questions. Do we really want individualized instruction in the schools? Or are the group practices so firmly ingrained in the school system that we resist radical innovation to pace learning individually? Look at what has happened to independent study in schools where teachers assign work to be done in so-called "independent study" periods.

5. *A hazard faced in time of change is a lack of information regarding the effectiveness of the change.*

These studies were aimed at the effectiveness of the process, not whether the innovation produces greater learning. We can have changes pushed by a dynamic superintendent, principal, or supervisor; we can work diligently at publicizing our innovations; we can have the best of relationships with other change agents in order to speed-up the time of adoption. But are these not characteristics of the "gung-ho," the bandwagon approach? Few of the innovations funded by foundations have had adequate

[6] Carlson, *op. cit.*, pp. 76–79.

evaluative studies. In fact, many educational innovations are not backed by research, trial, and experimentation. Innovation should have its own integral evaluation; then it becomes sound curriculum development. The research and development centers, such as the Center for the Advanced Study of Educational Administration at the University of Oregon, are charged with both research and dissemination.

Curriculum leaders need to be especially careful that evaluation accompanies innovation from the beginning. There are many research bureaus in universities; R and D centers work with school systems anywhere in the country interested in cooperating in research. Funds can be secured for evaluation of innovations. State departments of education are being strengthened with the research and evaluation functions in mind. There is, therefore, little excuse in the future to neglect proper safeguards for appraising what we innovate.

In curriculum terms, administrators and supervisors who want to make changes should work with teachers and the community, create conditions in which it is easier for teachers to change, plan curriculum improvements cooperatively, and take the lead in proposing innovations.

Chapter 4

WHO MANAGES THE MEDIA?

Educational technology is one of the realities that is shaping and influencing curriculum decisions. In a sometimes tortuously slow process of curriculum change, it is one of a number of new factors that is speeding up the tempo. It is, in a sense, both an innovation itself and a means to innovations in curriculum development. Political pressures resulting from revolts against social injustices and old forms, black power, and militant student groups may be more dramatic speed-up factors, but a means to facilitate communicating and storing knowledge will probably be more potent in the long run.

As curriculum leaders, we are concerned with seeing that media expedite instruction and promote instructional aims. If instructional aids or materials of any kind fail to serve teachers, teaching, and learning, we should be justly apprehensive about their use. I would suggest that one of our main concerns should be the fundamental question: Who manages the media? Who makes the decisions as to what goes into the media-based instructional system? Is it the educator? The individual school? The private sector? The teaching profession? For I am certain that none of us questions the power of any communications medium to shape public opinion and ideas. Who manages the selection of what is communicated to students? Surely, this is one of the curriculum decisions that looms as foreboding as any in a time of expanding technology.

ASSUMPTIONS REGARDING THE FUTURE

But we are amiss if we forget that media management is also management of ourselves in relation to media. How do we behave with regard to the breath-taking developments in educational technology? Do we make the same assumptions that were relevant to a past age? Do we, for example, assume that "school" is a place confined within a building, that teaching goes on within a classroom? We are aware that this is not the only place in which teachers teach, even today, but what do we assume the situation will be like ten years from now?

Let me illustrate from another field. Recently, I had the privilege of participating in a conference sponsored by a national church body that dealt with, "Significant Issues for the 1970's." This group of theologians, ministers, and laymen were asking themselves: What relevance does the church have to modern society? Such seemingly incredible questions as these were frankly raised and discussed: Should the church in the 1970's be housed in a building in the traditional concept? Do the conventional forms of worship have any meaning for young people in the 60's and 70's? Is religion of any value to man if it is not future directed? Who speaks for man and the human community?

Churches move into old stores in urban centers, to hippie hangouts, next door to bars, wherever people gather. Libraries are experimenting with library services in places which are readily accessible to people, providing information centers, reading centers, listening and looking centers in neighborhood buildings. Some model city school experiments question, among other things, the structure of our system of education and the type of building or other learning environment. Proposed "learning resource centers" equipped as laboratories, libraries, workshops, would be located in housing projects and other buildings accessible to neighborhood residents. These "schools" might be education malls, parks, lakes, or other educational and recreational facilities.

Are we leaders in curriculum improvement as willing to change our concepts, to question our assumptions? We can well ask *ourselves* the question: Who speaks for man?

We should keep in mind that the end product of educational technology is learning. Any system includes equipment, facilities, procedures, programs, maintenance, materials, and personnel required to achieve learning. The personnel are still very much a part of the process. Whether they perform new functions and are required to have additional competencies is a different question.

Surely, it would be unprofitable for us to continue to worry about such questions as: Will machines replace teachers? Are pre-packaged materials a threat to education? Should we encourage the development and refinement of systems of technology that can instruct? Such questions serve but as smokescreens to the important problems that educational leaders will have considerable responsibility for solving.

Packaged instructional materials will be produced and constantly improved. Instructional technology will assist in discovering new facts about learning, develop ways of expanding known limits of what man can learn. Unheard-of electronic devices will be developed. When the amount of wisdom and knowledge to be learned goes beyond comprehension, we should welcome these means of extending the possibilities of learning.

One cannot stop progress of educational technology, no matter how much social upheaval it causes, no more than one can stop the advance in medical technology, in aviation, or—as is quite evident—even in the instruments of destruction. Should we mourn any social development that may rid schools and colleges of the drones among teachers? For the incompetent and those unable or unwilling to change are the ones who will be displaced by technology. The more militant and politically powerful teaching profession has yet to be tested as to its ability to separate the weak from the strong and adventuresome who are willing to pioneer in the spirit of Vilhelm Moberg's emigrants.

ISSUES OF MEDIA MANAGEMENT

There are a number of aspects of the question of media management that I would like to examine. These are the "gut" issues.

1. *How will the teacher manage himself and the media?*

Media specialists have been telling us for some time that the role of the teacher will change. And they're not stargazing. Teachers will have different relationships with pupils from what they have today, in different types of settings. They will need different skills. The ironic fact is that machines give teachers the golden opportunity to "speak for man," to stress the human and the humane in the education of the child or adult.

The question is whether or not supervisors and teachers can rise to the occasion and take full advantage of this opportunity. To a large extent we muffed our chances in the use of the textbook and television. In many classrooms, the teacher became an adjunct to the textbook and the single text controlled the system of instruction, scarcely conducive to an open system of inquiry. The role of a teacher in a secondary school and college classroom became a fixed procedure within which only abortive attempts were made to individualize instruction.

Our responsibility as supervisors is to assist teachers in adjusting to a new role in learning how to manage both themselves and the media. If we listen to some prophets who would package the whole process of instruction, the danger is that we will allow technology to crystallize outmoded practices even before our educational purposes and effectiveness of means of achieving those purposes are very clear. For technology can very well indeed present information, develop a sequential pattern of learning, record what is learned, and store and retrieve data.

The golden opportunity for supervisors and teacher educators is to help the teacher with the aid of instructional technology in becoming a director of learning, a developer of human beings, a manager of an open system of inquiry, as described in Chapter 5. Moreover, teachers' and pupils' roles cannot be conceived of as distinct. Both will function as inquirers, questioners, arrangers, and interpreters.

If we conceive of the teacher operating within four walls of the typical classroom, we constrict our vision of what needs to be done in supervision and teacher education. In his interpretation of the report, *Equality of Educational Opportunity*, James Coleman speaks of one of the general principles underlying his proposals

as the transformation of schools from closed to open institutions, conceiving of school differently from a building in which the child spends his entire school day.[1]

In the College of Education at the University of Maryland, we have a Task Force on Teacher Education that is attempting to develop an experimental program in the professional aspects of teacher education. One of its tasks is to spell out the dimensions of teaching. A question we have found that we need to ask ourselves is: What will teaching be like ten years from now?

The teacher operates differently in colleges or elementary and secondary schools in which dormitory lounges, educational technology centers, offices, libraries, computer centers, open laboratories, camp sites, museums, industries, instructional materials centers, and independent learning stations are learning centers. Independent study, based on the idea that the student uses whatever resources, human or technical, at hand, requires an entirely new orientation to instruction.

These developments have far-reaching implications for supervisors, curriculum directors, and teacher educators. If supervision is based on classroom visitation, local curriculum improvement on outmoded processes, and teacher education on obsolescent assumptions of how the teacher will function in relation to media, we will indeed find ourselves outmoded.

Curriculum improvement will need to return to utilization of the workshop in which a teacher can work at his own problems of adapting to technology; where he can make plans and utilize ideas or processes in his teaching; where the teacher as a diagnostician, human relations specialist, clarifier of values, and guide can be demonstrated in children's classes or via media. Workshops are ideally suited to learning through demonstration and practice.

2. *Who decides what goes into the instructional program?*

A broader and a more significant issue is the question of who controls the information, the values, and concepts that go into the "software." The control of the purposes and content of education

[1] James S. Coleman, "Toward Open Schools." *The Public Interest*, No. 9, Fall 1967, pp. 20–27.

properly lies in the public sector of society and in the agencies that society has developed to promote its objectives. Educators and business leaders connected with the instructional technology business enterprises agree with this principle. It is at the operational level where the issues involved are not as clear.

The purpose of business is to make a profit; educators cannot overlook this point. There is always the danger of slanting the curriculum to industry's own viewpoint or to the viewpoint of what will sell. We have but to recall the content of history books sold in various parts of the country, or used in different countries of the world.

It is not enough for the new software corporations to employ educators. The part to be played by the professional and academic societies, school systems, universities, and the independent researchers in the development of software has to be determined. One of the most potentially promising innovations in which schools, universities, cultural agencies, professional organizations, and business and industry could work together toward promoting desirable ends of education, the regional educational laboratory, never has been funded adequately. The federal government seemingly chose instead to grant educational research funds directly to private industry.

The crucial question for us is what part education will play in decision-making regarding the content of instructional materials. Pre-packaged instructional programs and nationally developed courses seem to erode the curriculum leader's responsibilities. If, as has been proposed, schools contract with an outside firm to teach reading, arithmetic, or any other skill by means of instructional technology, the administrator or teacher would have even less to say about what is being taught. Who does the managing of media when programs are planned, developed, and executed by a private enterprise that holds a contract to produce results?

These developments chip away at the school's control over the direction and purposes of its program and the individual teacher's responsibility for determining the instructional program. As discussed in Chapter 5, there is no doubt that the curriculum leadership at the local level in public schools will take on new forms. Leaders will carry the weighty load of helping teachers adapt

their behavior to a revolutionary concept of teaching, made possible only if media are managed with insight and a clear vision of the goals we have in mind and the direction in which we are moving. Specialists will be available to work with teachers in preparation of programs and in the "home-made" use of media. Curriculum directors, principals, and supervisors need to help teachers become more expert in evaluating materials against desired objectives and in selecting among the various packages available. One of the more significant modifications of our function will be the leadership we can give to experimentation, research, and evaluation. "Packages" need to be experimented with and evaluated in the classroom or in the learning center.

3. *What should media be used for?*

How media can further the ends of an educational program is a primary question. How will it be used to make instruction more human, more pertinent, more relevant, and more effective toward meeting desirable goals?

When television came on the scene, was not one of our major errors that we thought of it as replacing the teacher, not supplementing the teacher? TV was used to provide the "lecturer" in place of the live performance. Within the narrow framework of a current definition of the role of a teacher, we encapsulated the use of a new educational technology with unlimited potential. The question was rarely asked: What does it free the teacher to do?

Wilbur H. Ferry, Vice-President of the Fund for the Republic, points out that the temptations to rely entirely and unquestionably on technology are great. He says:

> The perils are manifest. One of them lies in adopting the totally wrong notion that an educational system can be thought of in terms like those of a factory for producing steel plate or buttons. Another peril is to that indefinable relation between teacher and taught: Dare we think of it as a mere holdover from another world, as subject to the junkpile as the horse-drawn fire engine has been? A third peril is that the ends of education, already a near-forgotten topic, will be gobbled up by the means.[2]

[2] Wilbur H. Ferry, "Must We Rewrite the Constitution to Control Technology?" *Saturday Review*, March 2, 1968, p. 53.

Educational research can fruitfully address itself to such questions as: What type of objectives are specific media best suited for? In what situations can they most profitably be used to fulfill the goals of the school? What advantages do they have? How do they facilitate learning?

We need to address ourselves to the question of when certain media should be used. As educational leaders, we need to ask such tough questions as:

In what situations will the use of media promote the desirable aims of education?

Will they enhance or restrict the human, the humane, the spiritual development of man?

Do they facilitate or hinder the solution of such vital problems as the generation gap, the growing non-involvement and violence, and other evidences of man's inhumanity to man?

Any basic form of instructional technology is flexible enough to enable the imaginative teacher to use it in new ways. For example, the use of television equipment for producing "home-made" non-packaged instructional materials is limitless. Video-tape is used in teacher education for directed observation of teaching in schools, for micro-teaching, for creating a simulated laboratory, for self-appraisal and self-instruction, for supervisory procedures, for study of teacher-pupil interaction, for diagnosis and analysis of teaching, and for feedback and evaluation. These are illustrations of media management that is flexible, imaginative, and adaptable to the teacher's or supervisor's purposes. The teacher becomes the media manager, backed up by technical assistants.

Computer-based instruction and combination of media into systems of instruction make possible a greater degree of personalized instruction, pacing of learning, relevancy of materials, immediate evaluation, and the fascinating concept of no failure which is sure to throw some sacred cows into utter confusion! May I remind you that all of these elements of instruction are basically humane in orientation.

AN EDUCATIONAL TECHNOLOGY CENTER

The Educational Technology Center in the College of Education at the University of Maryland, which is an instructional service

center in a somewhat different sense from the typical audio-visual service, illustrates some of these means of utilization. It exists to aid faculty in managing media toward the objectives of their instruction and in doing research with utilization of media. A television studio, an individual learning laboratory, a graphic arts laboratory, a construction laboratory, and a model classroom are constantly utilized by faculty and students, individually and in groups.

Students and faculty are assisted in learning the skills of using equipment and media through individual and small group activities in the laboratories under competent direction. Instructional sequences are recorded on video tape in the nursery-kindergarten laboratory school and in public schools, to which the instructor adds explanations and commentary for use in group or independent learning. Faculty use video tape for counseling interviews and analysis of the client's reactions to the counselor, for research, and for teaching of methods through recording an instructional sequence taught by a student or instructor, which can be simultaneously viewed by other students. Even the faculty subject themselves to critical analysis by students! Some courses are taught partially through self-instruction with the use of materials programmed by a faculty member.

For all of these activities in the Center, expert advice is available to faculty from professors who are well-trained media specialists. The pre-service and in-service education of student and faculty member is molded into a continuous sequence of instructional activities through media, in which one cannot tell where the one ends and the other begins.

Desirable developments in media management can only come to pass if we as administrators, supervisors, and teacher educators change our own behavior, are thoughtful about the use of media, utilize media creatively ourselves, and adapt our role to that of the changing role of the teacher.

Chapter 5

THE SUPERVISOR'S ROLE AMONG STRANGE INNOVATORS[1]

Under the changing conditions which exist today, will supervisors be the innovators or the followers? If we cannot function in the usual supervisory role, then how do we work with teachers? What new skills may be demanded of us? Or is the supervisor's position outmoded, as some have suggested? As the new agencies and forces become powerful agents for curriculum change, what will be the curriculum leader's role? Are we destined to become impotent?

Some laymen whose opinions are rather highly regarded by their communities are questioning the number of supervisors in the school system and the proportionate amount of school funds spent for supervision. Probably a number of teachers agree with them.

Most of us who are classified as "administrators" are also supervisors. We are concerned about the future of supervision because, in our opinion, it serves a valuable function. But if we are going to consider the question thoughtfully, we need to be aware of the changing demands upon supervisors and the new fields of service roles that supervisors consequently need to perform.

[1] Adapted from an article by the author, "What Is the Future of Supervision?" in *MASCD Journal*, Vol. 1, No. 1, Fall 1965, 16 pp.

PRINCIPLES OF SUPERVISION

There are, I am convinced, a number of principles which can help us determine how we should function as supervisors in our relations with other human beings. These are principles that can assist us in assuming new roles.

1. *The assumption of mutual growth of all concerned is a significant factor in the improvement of instruction.*

Somehow or other we have developed the notion that supervision involves working on someone else to improve him. The principal, supervisor, or dean is supposed to be the person responsible for seeing that others improve; in other words, he passes on his superior information or know-how to someone else of less experience or skill.

Let us examine this idea. The assumptions are made:

a. That a person supervised wants to be "improved"
b. That he thinks he needs to be improved
c. That an outsider can improve him

Probably all of these assumptions are false. We have a good deal of evidence from curriculum study that the people involved in developing a course of study change the most. They work on themselves. No amount of exhortation about the new math has ever taught a teacher how to teach it.

If classroom visitation focuses on the weaknesses and strengths of a teacher, points jotted down during the visitation, is there an attitude of mutual improvement in the process? Does the rating of teachers result in improvement of their work? Does it result in improvement of the supervisor's work? These questions are entirely pertinent if one believes in this principle.

2. *As supervisors, we cannot change people; we can only provide situations in which it is easier for them to change.*

Change or learning at any age level involves interaction among individuals and motivation to learn. Supervision is, in a sense, teaching. One's concept of teaching tends to govern how he approaches supervision.

The supervisor who is much in demand by teachers has created a situation where change or improvement becomes possible. The conditions of respect for his knowledge, of respect for him as an individual, and of lack of fear of being "rated" have become such that he can be an effective motivator of change.

3. *Supervision should focus on the strengths of the teacher and his development as a unique individual.*

Is much that we do in the name of supervision essentially negative? How much time do we spend with teachers who are not doing so well as compared with time spent with good but potentially superior teachers? I would suggest we try to raise supervision out of the lowest common denominator beamed at weaknesses and at the incompetent.

How many of us truly value teachers who are different? Do we through our work with teachers and our evaluation of them try to make them conform to our pattern of "teacher"? Yet, there is no best proven method of teaching for all teachers. Often, the outstanding college teacher who lives on in the memories of his students is remembered for his idiosyncrasies that made him a colorful and stimulating instructor. Do our supervisory procedures encourage or discourage a person from being interesting, from being himself?

4. *The supervisor functions as a change agent, who helps people evaluate themselves.*

As a supervisor, I may perceive myself as an "improver" but my faculty may see me as someone who wants to meddle with accepted ways of doing things or with a curriculum with which they feel comfortable. Changing a supervisor's title to "consultant" does not change the perception of the teacher unless the consultant acts in a different way.

When the supervisor functions as an agent for change, he works with teachers in defining their goals and in evaluating themselves and their progress toward those goals. This principle stands in sharp contrast to the concept of leadership derived from business management, which centers on a strong person who can see that other people carry out orders.

In his role as change agent, the supervisor sees himself as

observing and listening, providing materials needed, questioning, encouraging teachers to raise questions, and promoting self-diagnosis and self-examination.

He may use a rating form but he uses it in such a way as to help the teacher in evaluating himself. The rating form has first of all been developed by teachers. In a conference, the teacher feels free to point out why he has rated himself as "seldom" on some items and what kinds of problems and questions he has. The difficulty with rating forms is in their use. Does the procedure lead to improved relationships between administrator and teachers and to improved instruction? Or is it used merely to weed out the incompetent?

5. *Leadership is a service role.*

The modern theory of leadership is oriented toward the service function. The status leader helps people to perform their duties more effectively by organizing the school, providing clerical services needed, keeping distractions at a minimum, and assisting teachers in innumerable ways to make it easier for them to do their job better.

The idea of service is, of course, related to how one sees himself as supervisor. If I consider my responsibilities to be that of seeing that others perform their duties by watching them to see that they are performed, this is the way I will act. I happen to believe that my job is to serve those whom I lead. If I were to spend my time in checking up on them to see that they are all busily engaged at all times, I would not have time for service.

The supervisor who considers himself a doorkeeper of rules and regulations is not operating according to this principle. He sees himself quite differently from the one who tries at every turn to see that teachers are furnished with instructional materials, suggests books, helps the teacher to make slides, or goes out of his way to be helpful.

Leadership that is effective in curriculum improvement in the modern day, as well as in the past, demands sensitivity to people's feelings, receptivity to their ideas. The leader has good ideas of his own, but he also knows how to use the competencies of others

where he finds them. The situation in which it is increasingly impossible for one person to become an expert in many fields requires even more sharing of leadership than ever.

6. *Supervision stresses good human relationships.*

What do our practices as supervisors do to our relationships with people? Do we tend to decrease or increase the distance between us?

The interrelationships as perceived by people are more important than the structure of those relationships. A school system may have set up an elaborate system of department heads, supervising principals, and special supervisors. Yet, it may be the teacher next door who is the person seen as most helpful in talking over ideas, getting suggestions, and discussing problems.

Class visitation may be one of the poorest ways of supervising. What kind of human relationship is the practice of visiting a classroom and then telling the teacher, "I'll talk with you about it after school?" This is exactly what he was told by his teacher when as a child he had been naughty in school!

The tradition that college administrators should not visit classrooms to try to improve professors is not a bad idea. It is based on the assumption that a college professor is a person who has purposes in mind, is competent in his specialty, and can interest and communicate with others.

Status often gets in the way of good human relationships. It is difficult to break status barriers. Some of us may try to maintain them. Distance tends to widen between people if the one of superior status stresses by his actions the attitude of superiority.

7. *In leadership, the authority of competence is superior to the authority of status.*

Authority enhances power. There is no doubt that the principal has the power to make demands of teachers and to require that certain rules and regulations be obeyed. The crux of the matter is in how he uses that power. A small man may use power to make himself seem more important. He may use it for his own ends, or he may compensate for his deficiencies. When a person

gets desperate, he is likely to use a domineering approach, to throw his authority around.

Authority also brings deference, which a supervisor may enjoy. He subjects teachers to more demands, more forms to fill in, more communications to try to keep the network of communication with teachers open. Reams of duplicated instructions flow from his mimeograph. Yet, his lack of ability or desire to have genuine face-to-face communication with individual teachers makes much of this activity mere busy-work.

The supervisor who is respected by teachers is competent to assist them—competent in the area of the curriculum that he supervises, competent in the use of instructional materials, resourceful in knowing where to find materials, familiar with research in the field. There is no substitute for the authority that is derived from competence. "Little men" do not possess it. It represents earned respect for what one has been able to accomplish, for oneself, not for one's position.

In working individually with teachers, do we try to impress them with our authority? Do we do most of the talking in a conference? Have we ever asked a teacher or teachers to rate us?

8. *Supervision creates an atmosphere in which there is freedom to disagree.*

The supervisor who wants to be an inspiring leader permits teachers to differ with him. If our goal is to help build a climate of free and open discussion in the classroom, we can do some indirect teaching by giving teachers practice in the procedure. We help teachers retain the freedom to be themselves.

I am well aware of the fact that encouraging freedom of expression without fear of reprisal is a most difficult notion to implant, especially if teachers have not experienced this type of atmosphere previously. The freedom to express oneself in the one-to-one situation stems from opportunity to do so in group meetings.

Creativity of teachers is definitely related to our own behavior as supervisors. We may narrow their field of operation by constant stress on rules and regulations. We develop handbooks for teachers, to the point where we need handbooks for hand-

books, *ad infinitum*. Perhaps we need a handbook on how not to be caught in the restricting web of our own rules.

9. *The supervisor is a most significant factor in encouraging experimentation.*

Creativity comes from a climate in which the teacher is unafraid of being venturesome, in which he knows that he has the supervisor's blessing to experiment. In order to innovate, one must move outside of his usual pattern of operation. As we noted in Chapter 3, the research on the adoption of new ideas suggests that persons sought for advice are more competent, more exposed to direct sources of information, have higher status than those seeking advice, and show themselves willing to change. It also rather clearly indicates that status leaders are crucial persons in effecting change and that those who are the most successful innovators keep all means of communication open and create a climate of freedom for those with whom they work. In these findings, it is evident that if change is to occur the supervisor is a most important link in the process.

In a situation in which a teacher is experimenting with new techniques, materials, or content, a supervisor has to be a part of the process from the planning to the evaluating stage. He not only encourages but he works with teachers.

What occurs in our schools that keeps teachers from experimenting? Is it only the lack of funds? What are the human blocks to inventiveness in any field?

THE TEACHER'S CHANGING ROLE

The role the teacher plays undoubtedly depends upon the way the community conceives of what a good teacher should be. Is he a model for the young, an intellectual, an idealist, a person of culture, a participant in community affairs or a stranger in the community, a person who knows, a judge of achievement, one who keeps strict discipline, one who gives guidance and advice, or a substitute for parents?

Some research indicates that teachers who rated high, when

studies of classroom behavior have been made, are those who have a tendency to be generous in their appraisal of others, who are interested in cultural activities, who have strong interests in reading and in literary affairs, who enjoy pupil relationships, and who manifest non-directive classroom procedures. Those who rated low tend to be critical, express less favorable opinions about pupils, do not enjoy close personal contact types of activities, and show less satisfactory adjustment in both intellectual and emotional ways.

Yet, it is apparent that the teacher will need to play a different role in the future. No longer can he be a dispenser of knowledge when instructional media can do that task better. The teacher of the future will be more of a resource, a counselor, an idea-stimulator, a tutor, an evaluator, a discussion leader, a guide. He will be someone who inspires, deals with human problems, opens up new channels of learning, and helps pupils to find new ways of looking at old problems.

That his role is changing amidst all of the new forces in education is often frightening to the teacher. The symptoms appear in teachers' fear of the newer educational media, of being displaced by automation. This is an emotional fear but, nevertheless, one that has to be recognized by the supervisor. What I am concerned about is the resistance that is built up against new instructional developments, to the point that some teachers may spend their energies fighting to maintain current roles in a teaching-learning process. People who are frightened and threatened by instructional media are already under their control, for scared people do not act rationally.

The newer developments will also mean a greater differentiation of roles among teachers. Team teaching, with persons filling different roles or with different competencies, is an illustration. Different teachers will serve as creators of materials, programmers of instructional materials, managers of learning centers, evaluators, media specialists, specialists in diagnosing learning disabilities, prescribers for remedial measures, technical assistants, aides, and other types of specialties we have in schools today—all part of one large instructional team.

THE SUPERVISOR'S AND CURRICULUM LEADER'S ROLE

If the teacher is to play a different role in the future, what does this mean for the supervisor? How do we help the teacher to become more resourceful, more human, more of a counselor?

I strongly suspect that the first step is to work on ourselves to behave in these ways in relation to teachers. I suggest that one of the best ways is to work with teachers in the kind of situation in which people tend to identify with each other, in which there is respect for the dignity of individuals, in which there is sensitivity to people's feelings, in short, in which we display the kinds of characteristics that we want teachers to have.

As teachers become more specialized in their fields, and become more differentiated in their roles, there will be less necessity for a supervisor in the traditional sense.

Our goal is to work ourselves out of a job, putting it plainly. As teachers become more competent, more expert, they need less supervision. Instead, do we unconsciously tend to justify our jobs by making teachers more dependent on us? Once a supervisory or administrative position is established, consider how hard it is in government or in education to get rid of it. In some of our activities involving teachers do we interfere with their doing their job well? Do we make them more independent or more dependent?

The teacher as the supervisor may be the most effective one. One of the advantages of team teaching that we may have overlooked is that it provides a situation in which supervision can go on naturally, informally, day-by-day. Teachers working together can help each other. Supervisors would do well to concentrate on how to become an effective member of a team in a school where new competencies, new specialities are constantly needed.

Teaching for value clarification, intelligent inquiry, and development of meanings will not just happen. One of the most significant roles that curriculum leaders have is to help teachers implement such concepts in their teaching. One of the promis-

ing ways to do this is to study systematically with teachers the behavior of teachers and supervisors in the teaching act. This includes the study of the supervisor's own "teaching" behavior as he conducts in-service seminars on analysis of teaching. For what better laboratory is there for such analysis than the process in which the total group is engaged?

The curriculum leader will need to be more of a coordinator than he is today because of the wider involvement of academic scholars, industrial corporations, regional agencies, and other groups. He will have more expertise available through research agencies in universities, his own school system, and regional laboratories. He will need to know persons in his locality who can be used as a resource. He will need to know the possibilities these agencies offer in the way of studies, demonstrations, and in-service education. I am sure that the curriculum director or supervisor will be more of a leader of in-service education, conducting and arranging for courses, workshops, research studies, and institutes in order to help teachers gain new understandings and skills.

I suspect that one of the most significant modifications in our role is the leadership we can exercise in experimentation, research, and evaluation. We can turn our attention to the evaluation of curriculum innovations, and of curriculum stagnations as well. We will be starting curriculum study where, in most cases, we used to leave off. Most curriculum improvement in the past has ended with a decision to try something new, developing a new course of study, new materials, a program for the gifted, or a new way of teaching a skill. Ordinarily, we did not take the next essential step, that of evaluating what we were inaugurating, largely I suspect because we did not not know how. Teaming up with research specialists and agencies now available, we ought to be the advocates of a sound base of knowledge about behavior changes that result from curriculum innovations.

I hope we will not become "flunkies" for federal programs. Instead, there should be specialists employed by school systems and universities who are given the responsibility of developing research projects and grant requests, specialists in research de-

sign and in grantsmanship, working at the call of supervisory, teaching, and administrative personnel. The curriculum leader's function can then become more of program planning and evaluation. He will be more of an innovator than a classroom visitor or an organizer of committees.

The school leader needs to assist teachers to select and use intelligently the vast amount of instructional materials. For if we do not exert this kind of leadership, we will leave the teacher in a rather confused state among a bewildering array of packaged plans, hardware, software, and curriculum programs, and the pressures to adopt new programs without giving thoughtful study to them. The process of selection among the instructional systems, the various national or regional programs, and the latest organizational devices promoted by foundations will indeed be a crucial task.

Chapter 6

A RATIONALE FOR A CURRICULUM THAT PREPARES FOR TOMORROW'S WORLD

When my little grandchildren speak of "yesterday," they mean any day in the past which they can remember. Their "tomorrows" take in anytime in the foreseeable future. I some times wonder if their concept of "tomorrow" isn't more realistic than mine. For when super-jet planes can arrive at the West Coast from the East Coast by the clock before they left, and rocket-propelled vehicles will in the future take us to another country by "yesterday," our concepts of time-space will have to change. A telegram announcing "Will arrive yesterday" would even sound a little stupid to my four-year old grandson.

CHANGES IN OUR LIFETIME

I told my class the other day that I grew up in the horse-and-buggy days. This is literally true, for I drove a horse and buggy to the creamery many a time when I was a boy old enough to be trusted with this chore on the farm. That was really only a brief time ago, a rather infinitesimal part in the time-span of the development of civilization. The horse that I drove, Old Harry, had been a workhorse who had now admirably adapted himself in his later years to being a buggy-horse, for he was calm, un-

perturbed, knew the turn to make at the half-mile corner on the road to the creamery, and kept his own steady jogging pace, just the kind of horse a young boy could be trusted with. My brother and I, who invented language as all kids do—especially more descriptive names for animals and people—called him "Harry Lufs," for his plodding nature and his tendency to loaf over the narrow, high mud roads. For him nothing changed; the mudhole opened up every spring by the willow-grove and by Bjur's corner. The snow drifts in winter were certain to be there in the same places. I never had to use the reins to guide him. He was safe, secure, and comfortable in his buggy-horse role. So Harry Lufs, who would have been a useless appendage today, never bothered about change.

I vividly remember, though, the time that my mother, my brother, and I took a trip to town—a long ten-mile trip—when we met a "tin lizzie." Old Harry had shown a disturbing fear of this new monster. This time he ran away and dumped us in the ditch, buggy and all. This was new, frightening. He didn't know what to make of it. His fear of the unknown became so terrifying that he no longer acted like a meek old horse was expected to. Life was no longer serene, predictable, unchanging. The automobile age had begun.

Rapidity of Change *

I am awed by figures cited showing that the great majority of scientists that the world has produced are living today, that science regenerates itself every decade, and that scientific data is stock-piling in scientific journals and abstracts, causing a problem of retrieval, storage, and keeping up-to-date. It impresses me to read about the rapidity with which the world has changed in this century as compared to changes in the total history of man.

But these facts are harder to comprehend than are the events in my own life, as I look back at them in perspective. The fact

* Materials in this and subsequent topics in this chapter have been adapted, and used with permission, from pp. 92–96, 108, and 383–384 of Vernon E. Anderson, *Principles and Procedures of Curriculum Improvement*, Second Edition (Copyright © 1969 by The Ronald Press Company, New York).

that the use of the automobile, the airplane, radio, television, antibiotics, sound movies, space satellites, the high-speed computer has all occurred within my lifetime makes a resounding impact on my mind. I learned how to repair harness and flynets, stack grain, and pitch bundles with just the right twist of the fork so that they would go into the separator head first, none of which are skills useful to the farmer today. These changes we accept as a matter of course and adjust to them remarkably well, considering that they represent a technological revolution surely as significant as the industrial revolution. Perhaps this background of some adults, incredible to a youngster who takes jet flights for granted, is one of the potent reasons for the generation gap.

Adjusting to Social Change

But adjustment to the social consequences comes hard. Although the resulting dislocations, the upheavals, are more in the realm of values than in economics, we can take little comfort in that observation. It is probably just as distressing and painful to see the social and moral values that seemed enduring and unchangeable crumbling as it is to face poverty and hunger. The fears, the eroding tensions, the insecurities, the emotional blows cannot be confronted as realistically as physical deprivations and blows. It is the individual's ability to cope emotionally with severe physical illness or injury that preserves his sanity.

Hazards of Predicting the Future

The effects of radio, television, and the airplane, the ease of communication, and the telescoping of travel distances were predictable to a certain extent. The known factors were there for making predictions, even though we did not always make them intelligently. Society and the schools could foretell with some probability better than chance what these developments might do to mobility, transmission of information, and human relations.

The demands of the technological advances for new technical skills, for literacy, and for change in social institutions and arrangements are predictable up to a point. Communication with

new next-door neighbors of India, Europe, and Africa demands new language skills. So does computer science, with a language of its own. The problem of an economy of abundance, of pockets of poverty in the midst of over-production must be wrestled with. But there are specialists who at least have known facts to help them make some intelligent predictions what these phenomena mean for the future. The greater need for stress on specialization, the fantastic increase in printed materials, and the development of INTELSAT have meaning for education. The results are within the range of prediction. The technological progress that goes on with jet speed today and rocket speed tomorrow, in geometric proportion, is fact, not fantasy.

It is in the area of what these technological changes do to our values, our personal beliefs, our security where they become more bothersome, more difficult to cope with, since they seem to challenge everything we know and stand for.

Cultural anthropologists, social psychologists, and other behavioral and social scientists have provided us with insights into cultures, cultural change, and human behavior under certain conditions. They have described with accuracy situations and conditions that relate to these situations. We are aware of the ways in which a person may react who finds that the old ways no longer hold, when the things which give order to his life are suddenly gone.

Not all change can be regarded as good or as progress, for certainly scientific change has not meant control of our total environment, nor been an unmitigated blessing. Even the progress in medicine, so that the waste of human life is diminished, is helping to create one of our most critical social problems, the population explosion. Another result of technological progress is the conformity to the ways of the Joneses, the binge of buying everything that makes for our comfort of the body rather than the spirit, and the tendency to conformity of thought. Few people make things of their own that are a part of themselves. For an individual who becomes more of a cog in a machine, the important things in life to talk about become the monotony of the job, the petty gripes, the routine and sameness. He becomes less important even in his own eyes and loses his perspective and

sense of purpose in life. In the Washington, D.C., area inklings of this phenomenon can be detected in the conversation of some who work in the bureaucratic system of a government office with its grades, daily routines, and status symbols such as the rug in the corner room. Toynbee has pointed out that technical progress may well mean human retrogression.

WHAT SHOULD THE SCHOOL TEACH FOR TOMORROW?

What then are the qualities, the attitudes, the information, and the skills needed for tomorrow that the schools should teach if we are not sure what future changes will bring? Those who have the one and only solution for education to save the world, a solution that has definitive answers, can command a good audience, for many people long for a tranquilizing solution of such assurance.

The one new fact resulting from technological progress, which has made the social institution of war outmoded and untenable, the fact that man is now able to destroy mankind on this earth, makes the future unpredictable. It is hazardous to predict what the conditions will be in the next ten to twenty years. I doubt that we can realize the full meaning of this change, not even the fact that this is a permanent change, not one that will go away.

As Old Harry took flight when he could not cope with what he saw, people tend either to shut out these facts as though they did not exist or to revert to irrational, primitive behavior. One of the distributing behaviors is what Kluckhohn has called "the retreat to the orthodox." [1] When the old ways no longer hold, we have to find something to hang onto. So we witness the un-American labelers and the Christian front organizations, the groups that attract those people who find security in values obsolete, bizarre, or irrational. In a period when we can be certain only of uncertainty as to the future, it is little wonder that people seek comfort in hide-a-ways of their own making.

[1] Clyde Kluckhohn, "Foreword" in Theodore Brameld, *Cultural Foundations of Education,* New York: Harper & Bros., 1957, pp. xii–xiii.

The educational solutions of "back to" the three R's, progressive education, harsh discipline, or the one-room school represent a desire for an age that no longer exists. Solutions viewed out of the context of the hard, cold facts of technological and cultural change are irrational ones. For there is no turning back. In spite of the uncertainties of the future, we must live with them.

It seems to me that we have to accept, first of all, the inevitable fact of the 1970's, the changes in technology and the corresponding effect on values. A second principle that should govern our decision is that these changes demand different knowledge, skills, and insights.

Specialized Skills and Knowledge

Specialization is a fact of life in a complex society accumulating a great store of wisdom. So is automation. An obvious conclusion is that schools, colleges, and universities need to prepare specialists at a highly technical or professional level. This is the easier task, except for the obsolescence of knowledge that results from continuous research and invention. These should be specialists not only in the scientific and technical fields but also in politics, in diplomacy, in cultural anthropology and sociology, in human relations, in the professions, in the arts, in business, in industry. However, those of us responsible for education will have to cope with the obsolescence of concepts and thought forms that hinder progress in any of these fields.

The more specialization we have, the more need we will have for a general education common to all in order to counteract atomization and narrowness of vision. Someone needs to put together the pieces of the individual and his environment. There is even more need for a cultured person in an age of mechanization with its leisure time that accompanies automation. The crux of the problem is: What kind of general education?

General Education to Cope with Change

To say that a child will be best prepared to cope with his adult world by preparing him well to live in his present world is a popular concept held by educators. Is this notion enough in

a world where tomorrow will be far different from yesterday and the future is unsure because no one knows what madman will push the fatal button? If our predictors of the future are less reliable because of the phenomenal acceleration of change, the young person's future world becomes an unknown to be explored. However, he is not only faced with doubts because of the erosion of age-old cultural values but he is also faced with the stark reality that he may not have a future.

Another dimension enters into the picture. What are the qualities, attitudes, and skills needed for survival in case of a nuclear war, if there is to be any survival? This is a far different problem than survival for a technological, automated age. For in this case, the survivor could find himself in the most primitive of conditions, with only the knowledge stored up in his mind to guide him. How do you prepare youth to cope with this eventuality? What deeper meanings of survival should the school foster?

Surely, these questions must be answered by the responsible educator and by the public. They can be answered by the charger on a white horse, who will solve it for us, by the retreat to the bomb-shelter of our minds, or by holding on to past practices because those are the ones we know and in which we feel secure. I would prefer a higher level solution.

We need, first and foremost, to prepare young people to cope with change and eventualities. I would hold that any kind of ancestor-worship will not do the job, even though modern in its forms. We do a disservice to the past if we hesitate to discard what is no longer suitable in either form, content, or process. The greatest memorial we can build to those who have gone before who have built an institution or developed an idea is to promote the further extension of knowledge, not just transmit it. The tombstone-and-flowers concept of education is immutable, lifeless; the idea of preparation for change is a living memorial that continues its good works.

One step, then, is to rid ourselves of the idea that the old, though useful and valuable once, is the best for tomorrow's conditions. Out-dated concepts or restricted forms of thinking are formidable barriers to such a possibility. If the advancement of

knowledge in any field is recognized, steps will be taken to find, organize, and test out new knowledge. This is one of the understandings and attitudes basic to those who will teach the future adults.

The Adventure of Intelligent Search

Another step is to dedicate ourselves to providing young people a means of study, analysis, and thinking. I am not suggesting a blind nor an exhortatory dedication but an objective approach to ideas and assistance in the process of analysis and rational thought. Actually this process is an intellectual discipline that can deal with varied conditions, social conflicts, tensions. The unknown then can become an adventure, an exploration that is exciting rather than frightening, a concept that surely has no age barriers. There is a security in one's confidence in his ability to use the process of intelligence in human, social, and scientific problems.

The process of interpreting, questioning, and evaluating change stresses independent thinking. This process demands objective discussion of issues, looking at ways of propagandizing, studying the methods of thought control and the techniques of argument used by rabble-rousers, self-aggrandizers, and anyone who wants to appeal to ignorance, prejudices, gullibility, and the mob-spirit rather than to the intelligent approach to solutions. Independent thinking is of premium value for a complex and changing culture, of low or negative value in a primitive one or in a society that attempts to bend people's thinking to its own dogma. The teacher who wishes to promote independent thinking needs to have tolerance for differences in views. In a time when it is more difficult for a person to retain his individuality, we should encourage divergence from the norm.

Sacrosanct Values

The whole realm of values tends to be encrusted with rigid, fixed sanctions. Granted that young people as well as adults need stability of values. This is important. But values have a blockade around them, especially those which deal with prejudices, parochialism, and local issues. The trouble is that these

blockades to the school's discussion of sacrosanct values do not keep them out of young people's minds. They keep popping in and disturbing youth who are sincere in their ideals but question some of the practices of adult society.

Thus, a curriculum that prepared youth to deal with change recognizes that cultural values also are in the process of change and that the resulting conflicts make examination of values a necessity. Those who would control freedom of thought make this more difficult but more necessary. Unless a society recognizes the fact that freedom is best preserved by free exercise of thought, it loses one of its most valuable assets for coping with change. To look objectively at one's own values is, by far, easier to avoid. If we are not careful, the quest for knowledge, for specialization, can shut out value consideration as effectively as unreasoned fears can.

Where values of today are not permitted to be examined freely, would it not be possible to focus on those needed for the world of tomorrow? I would suggest we look at what an unforeseen world might demand if certain alternatives occurred. The attitudes that some people have expressed that they would shoot a neighbor attempting to get into their bomb shelter in the event of an attack, or that police should "shoot 'em down" in a riot, are shocking enough to allow examination of the "why" and the "what" happening to values in our culture.

Study of Other Cultures

To live in an interdependent world requires more than a casual study of other societies. We know that we will be more rather than less interdependent upon others as long as we can keep living with them. The opportunities for interchange of students and travel are here, and will be even more so in the near future when intercontinental travel will little resemble what it is today. The Spirit of St. Louis is within the memory of many of us.

Will we use this opportunity to advantage for firsthand study of these cultures or for collecting gadgets? Two events that happened to me on a trip to Germany vividly brought home how oblivious one can be to his surroundings. One was to see how

some of the American soldiers in Heidelberg could just as well have been in Minneapolis or Denver or Timbuctoo, for they had learned nothing about the people, language, or their ideals and folklore except of the most superficial kind. The other was to see a high official display his "trophies" of the war in his magnificent house, which was one of the trophies itself. It made me think of the conquerors who pillaged the lands of the conquered. Both of these events were built out of the same cloth. These people were living on their cultural island without the slightest thought for learning more about the ones in whose country they were guests.

Encouragement of Creativity in a Technological Age

The cultivation of creativity, uniqueness, and non-conformity of thought is one of the leads that we have regarding preparation for change. A non-conformist has a sort of built-in revulsion for the orthodox. It is probably true that most of us are somewhat afraid of the creative individual, for to be creative he must think differently, disturb our patterns of thinking, and upset our neat arrangements of ways of doing things. Not only teacher behavior but also curriculum organization tends to foster conformity. Do we really have convictions strong enough and courage enough to value creativity in its fullest sense? It means, of course, tolerating, even welcoming, pupils and colleagues who differ with us, but who have managed to maintain an individuality in some relations with life and with others.

I do not minimize the dangers of increasing conformity of answers through application of technology to the educational process. But the danger is not inherent in the machine. The machine has no purposes of its own. Devices do not change educational goals. The question-and-answer, the discussion, the lecture, or any technique of presenting knowledge can and most certainly has been used for purposes of increasing conformity to the teacher's beliefs.

These new instruments can frighten us because they seem to be able to do more than man. So could the "new" invention of the automobile, the airplane, and gunpowder. But they proved

useful or destructive instruments as man learned to use them. There are weaknesses and limitations of programmed instruction and television but most of these are the limitations of the programmer, not the instrument. Even the camera cannot be blamed for the likeness its products reveal.

Preparation of the Teachers for the Unpredictable Future

What does all this mean for the task of teacher education? How do we predict the kind of principal, teacher, librarian, counselor, or college professor needed in the unpredictable future? Are we preparing professional people for a world of yesterday or of tomorrow? Does not the future require professional persons more adaptable to change who strive for more intellectual freedom, more independent thinking, more personal identity in an impersonal cultural setting, more inquiry and discovery of educational questions, more experimentation, more questioning, more creativity, more of the stuff that we live for, more consideration of values and principles, and more emphasis on rational thought? If the rationale is to prepare young people to cope with change, then I wonder if we have asked the right questions.

The specialization of the age cannot be disregarded in teacher education. We will undoubtedly have to prepare more kinds of specialists and give the teacher greater depth in a specialty. But again this argues for a common core of experiences—a general education both in the liberal arts and in professional education. For I doubt that we want to turn out specialists who know only a piece of the child or the child's school environment.

The reasons for reorganization and reorientation of content in the sciences, in mathematics, in English, in industrial arts, in social studies, and in any other field are just as valid for the field of Education. If teachers are to help children cope with change as human engineers, not cogs in a machine, we need to help teachers deal intelligently with change.

Much as I liked Old Harry Lufs and his comfortable ways, I never wanted to hang onto his tail.

Chapter 7

PROMISES AND PROBLEMS IN SECONDARY EDUCATION

The old stereotype of the secondary school presented a rather dreary picture. The principal was a former coach who knew little about learning, instruction, or curriculum and cared less. His pride was in a smooth running school with an orderly schedule that had the least number of possible conflicts. The exciting things happened in the extra-curricular program. The teacher taught from the front of the room by means of asking questions on the assigned content of the textbook and by reviewing the lessons both before and after examinations. In essence, the secondary school was a bastion against change.

Have you visited a high school lately? Particularly, have you visited those classes in which teachers are cooperating with one of the many national curriculum projects that have multiplied at an amazing pace in the last ten years? Sit in on one of the seminars in the humanities. Observe students in a laboratory working on the new biology. Follow around for a day a student who has a major portion of his time programmed into independent study. Visit with an industrial arts research seminar. I am sure you would be surprised at the changes that have occurred in the curriculum in some secondary schools.

To be sure, the millennium has not arrived. For I am sure you could take me to many classes where the routine is deadly, the monotony humdrum, and the teacher utterly devoid of imagi-

nation or sensitivity to either his students or to what is happening to the world about him.

But the secondary school curriculum is changing, probably even at a faster pace than the elementary school curriculum. I am speaking about the promising kinds of developments that are basic ideas behind many of the new curriculum programs. These are forward-looking concepts, surprisingly progressive in nature. Let us look first at what these promising developments are and then turn to some of the problems in putting these ideas to work.

I am not unaware of some of the undesirable developments in secondary schools, such as the tremendous pressures for achievement. But I have chosen instead to examine the promises that the present and future of the secondary school curriculum may hold.

THE PROMISES

Before I begin this task, let me make clear to you that I believe significant curriculum developments include both content and method. I see no clear-cut distinction between the two, for the method is to a large extent inherent in the nature of the content. One cannot intelligently discuss the development of a skill in a classroom without specifying whether it is reading, typing, or welding. Furthermore, as a curriculum specialist I prefer to define curriculum in terms of the experiences that a student has with content, with people, with events, with ideas, and with media.

Meanings, Concepts, and Relationships

One of the more promising characteristics of the new curriculum programs is the search for meaning. No longer is subject matter to be learned for its own sake but is studied in order to derive the larger meanings, an understanding of events and natural phenomena. Science goes beyond the facts and seeks the principles and generalizations. Mathematics stresses the concept of a mathematical system, theories and properties of numbers, and the ability to use principles in exploring a new

situation. Mathematics is to be taught as a way of thinking. I am sure that my geometry teacher never understood either inductive or deductive reasoning, for we learned theorems to be repeated from memory in class or for a test.

Surely, we ought to be able to look to the field of the social studies as the leader in teaching young people how to analyze, see relationships, draw inferences, and arrive at generalizations regarding political events and social and economic problems. But history has been taught as historical events and social problems as theoretical questions somewhere "out there" apart from the world in which youth live and move. Even though the social studies have never lived up to their promise as the core of the curriculum, there are heartening signs. The rather diverse and scattered curriculum reform projects replace isolated facts and descriptive information with cohesive sets of ideas. The major focus is on how ideas are related, how concepts are used as tools of inquiry, the understanding of relationships among historical events.

Communication of Ideas

I believe that we understand today, as never before, that ideas need to be communicated clearly if civilization is to survive. Nor is communication confined to the intellectual, for feelings and emotions also need to be communicated, whether through artistic products, the tone of the voice, or bodily expression.

One of the more radical changes in the secondary school curriculum is the notion that learning a language, including one's own, is for the purpose of communicating with other people rather than as an end in itself. The classroom for teaching a foreign language is a live laboratory where the language is used. The audio-visual approach with its emphasis on hearing and speaking has given a far different complexion to language teaching. Our neighbor is someone who may speak Spanish, French, Russian, Chinese, Urdu, or even a language that has no written form. His literature and his history, as well as personal contacts with him, are a means to achieving a better understanding of him. Even the more extreme idea of teaching social

studies through another language has a few proponents. For after all, language communicates something, whether it be textbook English, Cockney, Creole, or the ingenious language invented by the younger generation.

Both in classes in our native language and in a foreign language, new ideas about the fundamental nature of language as expressed by linguists have affected the curriculum. The changing character of language, the descriptive analysis of the structure of a sentence, and the presentation of a language as a system of patterns are aspects of linguistics found in some English classes.

Composition, which is communication of ideas in writing, is coming back into its own. In a specialized world in which psychologists find it more difficult to communicate with mathematicians, and within the field of Education researchers have trouble communicating with teachers, to say something simply and well demands less, not more, of the esoteric. Practice in telling others about one's thoughts and feelings is recognized as the focal point in many English classes.

Finding Out for Oneself

I think that one of the most remarkable developments in the secondary school curriculum has been the unqualified commitment to discovery and inquiry on the part of scholars who have prepared the new course materials. Imagine the changes in textbooks, in the way the teacher functions, in the very manner in which schools are organized if we really took this notion seriously. Shades of progressive education!

But this is exactly what a number of programs in science, mathematics, and industrial arts and the social sciences recommend. Laboratory experiments in the new biology, chemistry, and physics have no recipe answers. Students are to discover the basic properties of mathematics; they work out the problems rather than being told what to do. Principles are developed through laboratory discoveries, whether the laboratory be the classroom or the community. In the social sciences, primary sources are used as a basis for arriving at thoughtful conclusions. Students reach conclusions based on observation and interpretation of the evidence in any field.

This powerful notion may lead into trouble, for the answers may upset the status quo, represented by the teachers, the parents, or the power structure of the community—especially when it gets into the value questions.

However, scholars in the various disciplines and in Education understand quite clearly that there is no other way of educating youth to attack unfamiliar problems, since few of the known facts of tomorrow are available today.

The method of inquiry into observed phenomena or social and political movements has the same ends. It is the student's responsibility to devise questions, to ask questions, and to shape the inquiry. There are no final answers in an open-ended situation of this kind. Ideas are presented to be examined and criticized. The important learning is the behavior of the process of inquiry, not the facts and information already discovered.

Let me use an illustration from the field of industrial arts, a field seldom mentioned in the literature on curriculum reforms. Exciting developments are occurring in Maryland under the leadership of the University's Department of Industrial Education in the College of Education. An experimental industrial arts laboratory which is indeed an experience in discovery, is being conducted for ninth grade students in junior high schools. The laboratory uses the methods of research in industrial processes. Students select their problems, develop their hypotheses, develop a research design, construct their equipment in the shops, and conduct their experiments. In the process of carrying out these steps in the experiment, each student must present and defend before a seminar of fellow-students his proposal, much in the manner in which a doctoral candidate presents for criticism his research design.

Among the projects are included, for example, testing building materials under various conditions, testing the movement of a rocket by use of a camera, testing missile design for drag, devising a method by which a shock wave formed by use of a vacuum can be photographed, developing a mathematical computer. Remember, that these are ninth grade students, from below-average to superior ability, selected because of their interest in such a class.

Industrial arts becomes concerned with the understanding of

the industrial processes and how new answers are arrived at in modern industry. It is as much a part of the technological revolution as are mathematics and science.

Intellectual Challenge

Secondary schools are becoming aware of the fact that there is intellectual challenge in every subject, that excellence resides not in the subject but in the individual. Undoubtedly the advanced mathematics and physics courses are stimulating to the brighter students. So are seminars organized around great ideas and issues in philosophy, literature, psychology, and logic. But so is also the industrial arts research laboratory just described. For the students in the seminar it was an experience in the excitement of learning. One student told me, "I read everything in physics I can get my hands on."

The experimentation going on in many subjects, the exploration of new areas of the world, the study of such fields as anthropology, psychology, and linguistics lend themselves to intellectual excitement. Every subject has its potential, but only if the teacher realizes it. I recall when I served on a state committee on the secondary school curriculum, some of us proposed that there be levels of content suggested for each of the fields. It was a revelation when the members who represented the commercial subjects advanced the argument that there was nothing for the academically talented in their field!

Controversy and Risks

Another development can be found in secondary school classrooms where the spirit of adventure and risk prevails. It is the hazardous study of controversial issues. For surely a teacher is sticking his neck out if he is bold enough to discuss local controversies and problems, whether they be conflict of interest in high places, prostitution, graft, anti-Semitism, police tactics, censorship, racism, or civil rights. Protecting or extending the rights of people has always been a risky business.

In such classes, controversial issues are not merely the academic and far-away ones. Instead, they are the solid issues that affect the lives of students in their own communities and in their

own times. I strongly suspect that one of the reasons the social studies have been rated so low by students is that the meaty substance of controversy has been removed from the textbooks in order to avoid offending someone. What remains is a bland mixture that is not very tasty.

Courageous teachers assist pupils in examining issues that have to be solved, whether they be the war in Vietnam or threats to freedom. Rightists groups and their methods need to be examined as an issue. There are always people who would limit inquiry, who do not want high school students—or college students for that matter—exposed to unsafe ideas. For attempts at book burning exist in many subtle forms in order to keep young people from questioning the opinions held by powerful groups.

Looking at Values

Related to the question of freedom is the concern for values. The studies of Warner [1] and others, made a decade or more ago, brought out forcefully how social classes differed in their language, mores, values, ideas, and attitudes toward education, marriage, and family life. It was not until the recent concern for the culturally deprived in inner cities that much was done curriculum-wise for youth who lived in this environment.

Research and projects such as Upward Bound and Higher Horizons indicate that young people in the lower socio-economic classes can be assisted in raising their sights. The values that they hold are not kept under cover but brought out into the open for scrutiny. In such projects youth are in touch with ideas and mature values, guided by adults who are willing to listen and to take an interest in them.

They assist youth to examine their own values, through literature and through frank discussion of problems that young people from lower class and racial minority backgrounds face. Protest movements are a manifestation of the need for youth to find something which will give meaning to their lives. Young people, both from the inner city and from the wealthy suburbs, look

[1] W. Lloyd Warner *et al.*, *Social Class in America*, New York: Harper & Row, 1960, 274 pp.

for causes that can help them achieve a life of significance and integrity. To them the "missionary spirit" may only be a pseudo-value parading as the genuine article.

Curriculum Organization

A growing number of secondary schools have broken away from the traditional ways of organizing subject matter, scheduling the time of pupils and teachers in order to improve learning experiences. The use of television, team teaching, flexible scheduling, and ungraded schools are some of the well-known ways.

Growing size, increased mechanization of instruction, and the resulting mass instruction have caused educators to look for means of humanizing instruction. The very problems caused by over-grown secondary schools have led to a questioning of the traditional practices.

Research findings in the areas of creativity, human development, and individual differences have emphasized the uniqueness of the individual. Children have not fitted neatly into categories of slow learners, gifted, academically talented, culturally deprived, under-achievers, and that most mystical of all categorizations—the over-achiever. Each one is an individual with a learning potential and rate of his own.

Individuality and creativity have become more prized in a society in which the pressures are for conformity. Thus, the pioneers in secondary education today are speaking out for what Getzels and Jackson [2] and others define as the creative individual, the person who is inventive, imaginative, and flexible; the one who can produce new forms and ideas; the one who wants to explore the unknown and is unwilling to accept traditional answers without question; the non-conformist. You know, this can be a terribly unpopular fellow because he goads people into thinking.

I think the most intriguing way by which secondary schools have adjusted their programs and schedules is through giving

[2] Jacob W. Getzels and Philip W. Jackson, *Creativity and Intelligence*, New York: John Wiley & Sons, Inc., 1962, 293 pp.

greater opportunity for youth to develop their uniqueness. Students who can profit from it are programmed for part of their day for independent study. Shops, laboratories, music practice rooms, the library, art room, little theatre are available for use during these periods. Arlington High School–North Campus, Pennsylvania, in addition to these facilities has English and social studies independent learning centers, a "quiet study commons," and a "talking commons." In that particular high school, one-fourth of the time is scheduled for independent study, and the school has found that 97 per cent of the ninth and tenth grades can profit from such an experience.

More frequently, independent learning centers are being planned in high schools: individual study areas furnished with carrel-type desks, with dial-access systems, tape recorders, TV receivers, and programmed learning devices, or rooms equipped with paperbacks, magazines, reference books, typewriters, tapes, and other instructional materials.

The concept of an individual proceeding at his own pace in his study not only for one year but throughout his school years, is indeed a fascinating one. It is a concept embodied in a number of these organizational plans. Breaking away from the old idea of acceleration by moving pupils ahead a grade, this concept deals with acceleration within a subject, a skill, or a field of learning. It is, in essence, progressing at one's own individual rate in a field such as mathematics throughout the years of schooling. If we are honest with ourselves, we have to admit that in practice we have never begun to approach this concept in the adjustment of the curriculum to individual differences.

That the computer and other electronic devices will affect curriculum organization and the organization for instruction is undeniable. Changes can already be foreseen in experimental high school classes. Computerized systems lend themselves to individual instruction in that they enable the teacher to learn about the student and his learning difficulties as he is engaged in the process of learning. There is some evidence that a student in secondary school can profitably work at a computer-based console for two half-hour sessions a day. The Job Corps is experimenting with computer-taught high school courses.

THE PROBLEMS

These developments are both threatening and promising. They are frightening because they conjure up a vision of an Aladdin-lamp type of monster who, once released, cannot be contained. They are promising because they have the potential of opening up vast new areas of knowledge and of helping the individual to live up to his maximum capability. One of the threats is that we are not sure that we can use this inhuman monster of technology for human purposes. If we do not develop ways of humanizing instruction in the midst of mechanical learning devices, we will have abdicated our leadership. If the idea that a pupil's whole day can be programmed at a machine is seriously advanced, then we as curriculum leaders ought to be ready with plans, experimental programs, and tested practices that show how machine-based instruction can be adapted to make the secondary school a more human and a more person-centered place for the adolescent to live. We need to show how good human relations and warm inter-personal relationships can be developed.

But we will not do it by defending outmoded practices in secondary schools which really demean the individual, retard learning, or parade under false colors as promoting intellectual or academic excellence. I am thinking especially of the pile-on-the-homework, harder assignments, more-of-the-same kind of practices, when the same was never good enough. The concept of assigned homework and independent study are at two opposite poles, vastly different in the assumptions behind them.

I have outlined for you the promises that the curriculum reforms hold. Let me turn now to problems in putting these ideas to work. Here is a list of a number of these, some of which are then discussed more fully; others have already been discussed.

1. Many classrooms are unaffected by the new programs, especially in smaller or more isolated secondary schools.
2. Only the more resourceful teachers are willing to do the experimentation.

3. Few teachers have been prepared for utilizing the approaches in these curriculum programs; many have very little background in the content, which is so vastly different from what they studied.
4. There is an inherent difficulty in making changes in well-established teacher behavior.
5. We are not able to measure adequately such outcomes as openness to new learning, independent judgment, questioning, risk-taking.
6. Pre-packaged materials so complete as to exclude error may also exclude spontaneity.
7. The excessive pressure for attainment may take the joy out of learning.
8. As greater attention is paid to intellectual goals, less is paid to values.
9. Some programs may have little relevance for non-college bound youth
10. The lack of commitment to research and evaluation, which is typical in curriculum study, may cause us to disseminate before we have anything of proven value to disseminate.
11. The increased pressures from many sources for having new visible hardware without the knowledge of how to utilize it intelligently may be irresistible.
12. Pseudo-scholarship may parade as the real thing.

Preparation of Teachers to Utilize New Programs

Summer institutes in science, mathematics, foreign languages, and English, as well as a few in other fields, have served to prepare teachers to use the new biology, modern mathematics, or other new curriculum programs. The trouble is that these institutes do not reach the majority of the teachers. Moreover, they have been more successful in teaching the understanding of the content than in teaching the approach which is an inherent part of the content. An exception is the foreign language institute which utilizes the aural approach. In addition, where demonstration classes have been built into the institutes, teachers have had a greater opportunity to learn how to use a new method. But stodgy professors who insist on lecturing about discovery

and inquiry, whether they be in biology or in Education, do not teach teachers how to use the new approach.

The Teacher's Resistance to Change

Most of the promising curriculum developments that I have discussed call for a different concept of "teacher" than someone standing in front of the room directing the lesson and dominating the questioning and answering process. If the teacher's function is to help students discover principles, examine ideas, do research, analyze controversial issues, examine values, and look for meanings, he will need to operate differently. He will be more of an expert listener, an expert observer of behavior. He will answer more questions than he asks, accept students' statements, encourage them to question data and to look for faulty reasoning. His responsibility will be to make the student a self-propelled learner.

Yet, in too many instances this is not what we find. The shadow studies reported in that provocative ASCD booklet, *The Junior High School We Saw*, presented a different kind of picture of the teachers.[3] They were concerned with keeping pupils quiet, often answered questions themselves, prompted students by putting words in their mouths, made frequent use of threats of marks as punishment, and did not allow questioning of their assertions. Examples of teacher statements to pupils were: "You have to do it anyway," "All the answers are to be found in the natural resources textbook," and "Just put down what I say as an answer."

The problem is changing the concept of the teacher's role, surely not an easy task for any of us. With the assistance of a supervisor, a teacher can be helped to analyze his own teaching process, to look at questions such as these, based on observable behavior:

1. Do I challenge students to question, to refuse to accept the ready or easy answer, to dispute ideas?
2. How do I react to the student who irritates me with his questions?

[3] John H. Lounsbury and Jean V. Marani, *The Junior High School We Saw: One Day in the Eighth Grade*, Washington, D.C.: Association for Supervision and Curriculum Development, 1964, 78 pp.

3. What do I do to help young people become independent of me?
4. Do I accept what students have to say as important?

The opportunity for humanizing classroom procedures is actually greater than ever before. For the teacher can now turn his total attention to inter-personal relations, to perfecting group processes, and to dealing with human problems, value questions, and cultural activities. He will have more time to serve as a friend, confidante, and counselor to his students. What may look like a massive de-humanizing process can turn out to be the opportunity of the century to change the teacher's role into a much more significant one—if we have the vision, imagination, and courage to take advantage of it.

Putting Learning into Separate Boxes

One of the problems created by recent curriculum reforms is the resulting emphasis on separate and discrete subjects. Biology, chemistry, and physics are developed in separate boxes without relation to each other. Rather than developing projects in the social studies, we have projects in history, geography, sociology, anthropology. Some say that the subject-centered approach has gained a greater foothold. I would ask: When did it ever lose its footing?

Even though the popularity of departmentalization of subjects is on the increase, the current curriculum projects have some characteristics that are a far cry from learning subject matter for its own sake. The use of research techniques of the social scientist to discover new data has not the slightest resemblance to the concept of subject matter to be covered, so basic to the subject-centered approach.

The humanities and the arts, now receiving additional funds for curriculum study, will be a leavening factor. Again, we will have strange allies in our attempts at integration of subject matter. Scholars in mathematics, science, and philosophy are calling our attention to the basic unity of knowledge. Astronomy blends into mathematics; mathematics is a means of studying the sciences.

The Pseudo Movements

As in any kind of social movement, the false prophets and sham proponents spring up in abundance. Progressive education had more than its share of pseudo-progressives who peddled all kinds of nonsense and twisted the idea to their own interpretation.

Probably the pseudo-intellectual movement is as great a problem as we face in curriculum reform. Marks and credits become the symbols of learning. Hard grading, toughness about failure, and conformity to a norm are spurious substitutes for the genuine article. Even more of a sham is the notion that the quality of an intellectual task is gauged by the height of the stack of homework. For the highest form of intellectual challenge is the excitement of self-initiated, self-propelled learning. Amid pressures for orthodoxy, the really significant question is whether a student has become self-reliant and excited enough to proceed on his own steam.

Chapter 8

MAN MUST FIND NEW COW PATHS *

The other day when I was browsing through the newspapers, I came across a brief item about an injunction against driving cattle on a public road. For a moment it seemed as though I were transported back to another decade early in the century. But I was suddenly brought back to reality by another article about hopes for placing a man on the moon. In education we have our own cow paths, which are just as incongruous when placed side-by-side with the incredible speed with which technology is changing our world.

To attempt to give a picture of what the curriculum of 1984 will be like one would have to be a prophet with the vision of an Isaiah and a leader with the wisdom of a Solomon. I profess to have neither. Yet, the more I thought about the matter, the more I realized that this was my responsibility. This is your responsibility. For if we are ever to get out of the winding cow paths, the comfortable, slow trails of the "primeval calf," we must look beyond our everyday routine, beyond the problems that bother us day by day and absorb our energies, beyond our gripes toward the meaning of earth-shaking events for the curriculum of the future.

* Adapted from Fifth Annual Lectureship, Portland State College, "The Improvement of Secondary Education," February 8, 1964. Portland, Oregon, 36 pp. (Mimeo)

Even though 1984 is very much in the future, I would prefer to address myself to the question: What can the curriculum of the schools of the future be like? I prefer to look ten years ahead. After working some thirty years in curriculum improvement, one realizes that impatience is not the most helpful attribute for a curriculum leader in a school or college.

PREMISES

I shall base my discussion on certain premises concerning the curriculum, learning, and curriculum change.

1. *The curriculum consists of the planned experiences of pupils under the direction of the school.*

It is more than the content, the subject matter to be learned, and the books to be read. Pupils have experiences with content, with materials, with each other, with the teacher, with the community. Their experiences will be of a high or low quality, depending upon the teacher's understanding of the subject, his interpretation of content, the methods that he uses, his understanding of the pupils as individuals and as learners, and his ability to stimulate excitement in learning. Thus, content, method, materials are all interwoven.

2. *Learning is change of behavior.*

If children, youth, or you and I have learned something we act differently, speak differently, write differently, or exhibit in our behavior new skills, new interests, new relationships to others, and new understandings that somehow make a difference in us.

3. *Curriculum change, consequently, is a continuous long-range program.*

People do not change overnight. If this were so we could eradicate juvenile delinquency in a hurry by applying all that we know about human and social behavior. But the hatred in the minds of the Oswalds, the Sirhans, and the Rays has seeped in over a long period of time. Their experience with their culture and with other human beings made them that way.

So it is with curriculum change which involves both a change

in teachers and, in turn, in pupils. It is something which we need to work at constantly.

4. *The school is only one social influence in the life of a child.*

Over the years of schooling, the greatest influence on the child is the culture in which he lives, including his family and his peers. Should it be one of poverty and hunger, of knowing neither father nor mother, of brothels and beer joints on the street corner, devoid of love and affection, the school's job seems insurmountable. The school has a difficult time, indeed, in stimulating intellectual curiosity in a child if he comes from a home that cares little about education.

5. *Technological changes demand different skills, knowledge, and insight.*

Advances in technology that make possible eradication of poverty and disease; hasten automation of labor; telescope travel distances; facilitate communication; create new hazards; cause density and shifting of population; change the living habits of the consumer; call for new technical skills, changes in social institutions and arrangements, increased knowledge, new language skills, increased independence, greater adaptability and inventiveness, and ways of enjoying the creativeness and the simpler pleasures of life. The greater the advances in technology and knowledge, the more specialization becomes a fact of life.

ASSUMPTIONS

You will note that I asked, "What *can* the curriculum of the future be like?" not "What should it be like?" I believe that significant changes in curriculum can occur if we want them badly enough. There are, however, certain assumptions concerning conditions that need to occur. Should these assumptions prove to be true, we stand a good chance of having the kind of curriculum I shall describe.

These are the assumptions which I make:

1. That we will understand the meaning of the technological revolution and the problems created.

2. That we will realize we can no longer count on the world of 1979 or 1989 to be like the world of 1969.
3. That we grasp the fact that there is no security in the future.
4. That we understand that knowledge is not fixed nor permanent.
5. That we understand that there are no limits to learning.
6. That we are able to distinguish between means and ends.
7. That we will have learned how to listen.
8. That we are convinced we need to help the students learn how to cope with change.

Is this a tall order? I am inclined to think that it is, because having these understandings and skills means that we will give up some of our cherished ideas and values. But I have a sincere and abiding faith in teachers and in the public schools. I believe we can meet the challenge that faces us.

Although your span of years may not go back very far, I am sure that your memory encompasses changes which adults and youth alike accept as a matter of course. We buy groceries in the evening and even all night, checking them out through a line where we are one of a mass of unknown faces to the checker. Gone is the satisfaction of the personal relations with the grocery clerk or garage-man or the butcher. (Once a large suburban garage lost my car for two days!) We get our lunch from an automated machine, toss our quarter into a basket at the toll-gate, fly from the East coast to the West coast in a few hours, go on vacations to Europe, and take all of these changes in our stride. Life becomes more automated, less human, at the same time that there are tremendously increased possibilities for human contacts all over the world.

A TECHNOLOGICAL REVOLUTION

We are living in the time of a technological revolution as significant and uprooting of our economic arrangements as the industrial revolution.

The Computer

A most far-reaching invention for both society and education was the development of the automatic, electronic digital computer. Just a decade ago, the computer was in its infancy. Today,

all modern industries and colleges have computer facilities, which are vital in space and defense programs, control industrial processes, assume clerical roles, analyze student data, forecast elections, transmit information, and incredibly speed up the process of research.

Let us look at just two phases of computer science, which is now a complicated newly emerging discipline with a language of its own.

The first is the handling of information about students and teachers, such as admissions, records, scheduling, certification, registration, payrolls, and other personnel and financial data. Increasingly, schools are using computer systems for information storage and processing purposes. Computers can be used to schedule 2,000 high school students in a flexible type of program in about one hour. So far, only a few high schools use this method of scheduling.

The ability of the computer to save time and human energies for other purposes is incredible. Yet, the lag between what we know can be done and what is done is great. Nowhere is this more evident than on college campuses. It is possible to develop a system of data processing in which each college student would have a number and one set of records stored in the computer to be utilized by the admissions office, the registrar's office, the counseling center, the dormitory office, the health service, the finance office, the academic dean's office, and any other office that keeps records on students. Now a student usually fills out an interminable number of forms in each office and at each registration period. Much of this is duplicated data. We may creak along with a week's registration time each semester in a university when experts tell us that it is perfectly possible to do this task by data processing without the discomforts and frustrations to students of standing in lines and filling in forms, to say nothing of using about a week's instruction time. And we could do it more effectively so that the student could get the classes that he wants in the semester when he wants to take them.

Storage and Transmission of Information

When the printing press was invented in the fifteenth century, the recording and transmission of information was revolutionized

and the increase of knowledge was made possible. Now we stand at another threshold of a great renaissance of knowledge at a time when backward peoples are rapidly awakening to the fact that knowledge is power.

The possibilities for storage and immediate transmittal of information from library to library anywhere in the world through the use of computers jolts our imagination. Already a major university has appointed for its new librarian an electronics engineer and specialist in computer science. What will this development do to the cow paths of our libraries? Will librarians see it as a challenge to disseminate information with such facility and in such volume that libraries can keep up with the growth of knowledge as well as extend it? Or will they see it as a threat to them because their roles may change?

Instructional Technology

Instructional technology is for teachers a most significant phase of technological developments. Television, overhead projectors, motion picture and slide projectors, tape recorders, teaching machines, and video tape are rather common technical aids. Integrated educational systems are being developed. Integrated systems combine the computer with other media now in use, such as, television, video tape, programmed instruction, films, slides, tape recorders. In a systems approach, objectives, means of presentation, control, and evaluation are combined into a system of instruction. A system of this nature can simulate many of the present functions of the teacher and the librarian. Data become accessible for classifying students, counseling, measuring effectiveness of instruction, recording and analyzing errors, and feeding back information. The computer can revise information weekly or at set periods of time. Continuous evaluation of the student, student group interaction, simultaneous individual instruction, and long-distance communication with information centers are possible.

Students in experimental schools work at a pace suitable to them as individuals. The system takes into consideration background and previous learning of the student. Courses can be made available at a moment's notice and continuously updated.

This type of system can guide the learning process to a degree never thought possible. Yes, the cow paths of today are indeed jet trails of tomorrow.

Problems of Automation

All is not a blessing that comes from technical advances, especially if the human warmth, love, and service is left out of the picture. Automation causes displacement of workers, unemployment, and slow starvation to industries like coal mining, with its untold suffering and hunger. The fact that we would have to find new cow paths to working with students overly disturbs some but it is a distinct challenge to others.

I make the assumption that teachers will achieve this change and that educators will retain control of the technical devices available to them. For it is fairly well accepted by thoughtful persons, that the greatest potential future danger from machines like the computer lies in the control of concepts and ideas fed into them and in the use of processed information about individuals. The control in the hands of dictators, power-seekers, crackpots, or unscrupulous men is indeed a frightening prospect. Another hazard is the failure to understand the potentialities and the limitations of technical aids to instruction and to use them indiscriminately and unintelligently.

Technological changes affect old ways and skills that represented stability. By the time high school youth enter the labor or professional market, the required preparation may have radically changed. I am impressed by the extreme youth of employees that one meets in a computer center. Those trained even a few years ago had no opportunity to learn the technical or scientific skills of this field. This is not a field in which the son will learn the trade at his father's knee.

Obsolescence of Knowledge

The acceleration of research and the discovery of new knowledge has likewise made its inroads on venerable concepts concerning science, mathematics, economics, political science, medicine, education, and other disciplines and fields of human endeavor. The information contained in science textbooks today

may be largely outmoded ten years from now, scientists tell us. If today's facts may become tomorrow's folklore what kind of stability can we attain in the school curriculum? What about our own knowledge that we spent four to seven years of schooling beyond high school to learn? Will only history, literature, and Latin teachers be secure in their accumulated learning?

The dilemma that we face in a rapidly changing world is the inescapable fact that the high school student of 1969 will be the adults of 1979, 1989, or 2000. What does this mean? Does it mean that we can teach them no skills, concepts, or facts that will not be outmoded by that time? Or does it mean that we should not teach anything but the past?

I suspect if we conceive of learning as an accumulation of something in a storage bin, we have cause to be concerned. No teacher worth his salt ever thought he had "learned it all" when he finished his degree. I suspect all of us realize full well that if we want to continue to be teachers whom students respect and admire, learning for us is a lifetime process.

Possibilities for Learning

Most heartening is the news that there seem to be no limits to what the human being can learn, at least no limits that have yet been approached. Even for the handicapped child we have often seriously misjudged his limits. It was in Portland, Oregon, Public Schools that I first visited an elementary school program for spastic children, some of whom might have been given up to a vegetable-like existence, but who under the patient tutelage of a highly skilled teacher had learned to read and enjoy life through books. Research in programmed learning, creativity, and among the cultural disadvantaged children would indicate that we give up too soon with many children.

Means and Ends

We live in truly stimulating times for education. There is more experimentation and research in education going on at present than ever before. Different forms of instruction and curriculum organization described in Chapter 7 are being tried.

Yet, I am intrigued by the fact that we often accept the form

for the spirit. Marks and credits become a symbol of learning. Schools may inaugurate team teaching before the teachers either have understood or have accepted the idea. Tracks become a symbol for taking care of individual differences while students continue to receive the same content at a different pace. In fact, some schools boast that they have "it" just to be in the swim of things, but a visitor would have a hard time finding the "it." They have mistaken the means for the end. Having programmed instruction or team teaching is fashionable; consequently, they must have some of it somewhere. This approaches naïveté in curriculum improvement. The meat of instructional improvement can be found only in what happens to the behavior of teachers and pupils, not in the forms or administrative arrangements within which they work.

The Art of Listening

I want to speak of a subject that is a somewhat delicate one, for it seems to imply that we have not done our job in the past. We have, but our job will be different in the future when we will have at our disposal a wealth of teaching aids to help us do part of the job of teaching. Teachers will need to listen more. The roles of teachers and students will be slightly reversed. Studies of teachers' and pupils' acts in the classroom show that teachers do most of the talking and ask most of the questions.

I have been sitting in with a group of faculty and public school supervisors of English who are concerned about developing instructional materials that youth from the culturally deprived areas will read and will talk about. They point out that pupils of this type may have something to say when they write for the teacher, but they are soon discouraged since the only feedback they typically receive is "split infinitive" or "misspelled." The teacher had not bothered to listen to what they said.

A VISION FOR THE CURRICULUM

The cultural heritage will continue to be an important segment of the curriculum, but to teach what has been without regard for today or tomorrow is not the answer. In a technical, machine-

age, push-button world there are some concerns which I believe should hold priority. There are some imperatives for the school curriculum of the 1970's if it is to represent a vision for the future in a changing world. While this vision for the future may seem to point more toward the secondary school curriculum, much of it is equally applicable for all school and college levels.

1. *The schools will emphasize what is genuinely liberal and human.*

In a time of mechanization and increasingly powerful means of destruction, there is more need than ever to emphasize the human, the emotional, the beautiful, and the artistic products of man, the part that cannot be put into a numerical symbol, codified, and processed. A real liberal education makes a person more human, more interesting, and sets his mind free to soar to new fancies, new imaginative products, and new ideas. An unliberal education that binds and fetters the mind is represented by feedback teaching whether by a machine or by a teacher. The antidote to keep persons sane in a world of tension, rush, and insecurity is the quiet pause of poetry, the siesta of music, or the idle hour with a good story.

2. *The teacher will place a premium on new ways of looking at problems as contrasted with doing what is expected.*

This is one definition of creativity. Are we willing to take the risk of unleashing creativity in people? The creative person tends to be a non-conformist. He thinks unconventionally, may rebel at pedestrian ideas and routine tasks, or refuses to go along with the neat social arrangements and traditional patterns. Can we accept and value the pupil who irritates us, not by beatnik manners, for that is superficial rebellion, but by unorthodox ideas and a refusal to accept as truth all that we say? Some of the campus "rebels" of today are genuine; others are pseudo-rebels who are not fundamentally concerned about the cause of humanity.

If we are not careful, we will make the pupil conform quickly enough. Pressures are put on him by his peers and by society. The teacher's discouragement may make him capitulate to the comfortable, the accepted ways, and the right answers. Only the stout-hearted survive. When he goes to work in a government,

business, or educational organization, he is confronted with formidable rules and mores that make it more difficult for him to be creative.

I believe the question is, instead: Can we afford not to take that risk? For originality, inventiveness, adaptability, and imagination are the very traits we need to cultivate in a society in which man explores the unknown and searches beyond the certain. We are desperately in need of people who can be creative enough in social and international relationships to keep up with the accelerated tempo of technological change and understand how to cope with the unleashed forces working for freedom, with the smoldering racial and national hatreds, and with the lethal instruments of warfare so terrible we shut them out of our minds.

At the same time, we need to help our students combat the tranquilizing and ostrich-like effects of status-seeking, thinking in terms of a stable yesterday, and country-club living.

If we want to promote creativity, we cannot squelch the nonconformist nor the divergent thinker. This we will most surely do if we reward with the highest marks the student who gives the answers we want or if we show a dread of people who dare to think differently. Instead, we need to free students from excessive external evaluation with the quick red pencil—a threat to the original—discuss with them their most fantastic idea, encourage their questions, permit them to make errors in learning, help them to become independent learners, and when they show that they can, let them run.

3. *Curricular provisions for individuality will take on a new meaning.*

Have you ever pondered what the phrase "provision for individual differences" really means? Does it mean that when students are grouped according to ability by curricula, track, or grades, each one's own unique learning needs will now be met? Evidently not, research tells us. Homogeneity of a group is a myth; the range is narrowed somewhat on one trait but not on others. Moreover, narrowing the range of differences in any group taught is a clue to poor teaching. The better the teaching, the greater the spread of scores in achievement.

I am convinced that provisions for individuality will come to

be evaluated by how much we spread the range and by the progress that the individual makes. The cases where the child progresses at his own speed through the years, building on what he already knows, will be common. We will recognize that grouping still is mass instruction, not individual instruction.

The means for individualizing seem to be within our grasp if we can learn how to use them. Programmed instruction, which we must remember is only in its infancy, is a means of self-instruction which does not recognize failure. The plan of sequential steps in a program is the closest thing to a continuous sequence in the curriculum we have yet been able to devise. In this type of communication system, as in language laboratories or tape recorders, the teacher communicates to the student by a different medium to help him learn at his own rate. Studies with slow learners have shown that they can learn more by use of programmed instruction than previously thought possible, but at a slower pace.

Genuine individual progress in one's tasks is one way by which we shall be able to solve the problem of pupils learning more in their individual specialties. Can we devise organizational and administrative arrangements that would permit students to pace their learning according to their unique abilities and still work with others at times to learn the necessary skills for group living? I think we are already on our way. The question is whether or not society, as well as educators, will recognize and accept the fact that a sixth-grader may excel a sophomore in high school in some areas of attainment and that there are no grade levels of learning.

4. *The curriculum will give students experiences in experimentation and discovery.*

One of the most promising trends in the secondary school curriculum is the stress on experimentation and discovery of principles and generalizations in the materials in science and mathematics that have been developed by scholars and educators. The new textbooks themselves do not guarantee the application of this idea. They can become as outdated as their predecessors if the book is considered the equivalent of change in the curriculum. In the hands of teachers who understand neither the concept of discovery

nor the new developments in these fields, these textbooks can be made sterile and uninspiring. The same kind of trend is occurring in a field often relegated to the non-college curriculum and to the slow as in the industrial arts research laboratory described in Chapter 7.

This is a far cry from handing students the "right" information to be sure they learn what someone wants them to learn. Creativity is related to experimental inquiry. The answer can no longer be confined to a book, for true experimentation does not set out to prove a point.

5. *Students will be given experience in dealing with issues and in examining values.*

Can you imagine what the application of the principles of discovery would imply for the social studies? I well realize that all history cannot be researched through original documents, nor all knowledge rediscovered in other social sciences, although we can give outstanding students more experience in doing so. I also realize that good teachers have long had their students examine issues and arrive at their own conclusions. But I am also aware of the fact that carrying on studies of community problems or having students gather first-hand information about the community is not the norm. I am wondering how many teachers had their students examine objectively the issues involved in conditions that led to the Kennedys' and Martin Luther King's assassinations. Or how many teachers in problem regions examine riots and racial violence objectively.

This idea of examining issues and discovering answers is the very antithesis of what the John Birch Society and other similar organizations stand for. Consequently, the risks in so doing become greater as their forces become more vocal. Again, it is a question of whether or not we are willing to take the risks. I like especially Whitehead's profound statement which is apropos here: "It is the business of the future to be dangerous."

I am convinced we need to realize that if we capitulate to the library and textbook censoring groups and those who feed on hate and fear, we will be allying ourselves with one of the most powerful anti-intellectual forces in America today. These are

not rational means. True intellectual study demands examination of facts, issues, and ideas. Forces that suppress ideas and want to preserve the status quo by any methods, no matter what the consequences, are destructive of intellectual talent and wasteful of creative human resources.

The values stood for by those who would have only their own point of view taught are grist for examination. So are values within different social and economic classes. The studies of culturally deprived children in big cities have highlighted the need to let children bring their values to the classroom for examination and discuss issues important to them. Moralizing and scolding about such values and issues only make the school more of an unreality separated from life.

6. *The student will be given a chance to become increasingly independent of the teacher and of the classroom.*

Independence of thought, independence in supporting oneself, and independence from protection by the family are important goals of education. They are developmental tasks that need to be performed successfully by youth in order for them to become mature, responsible adults. In crucial times of social change in a democratic society, there is even more of a necessity for people who can make good judgments. The frontiersman of tomorrow is not the rugged pioneer who depended upon himself to farm a homestead. He is the self-reliant individual who can retain his identity amid pressures for orthodoxy, who can hew out new ways of helping others to become free, self-supporting communities. He is the scientist, the social scientist, the politician, the physician, the teacher, the community leader, and the minister who discover new ways of helping human beings to develop physically, mentally, and spiritually.

In secondary schools we already have a promising beginning. Opportunity for independent study for the student capable of working on his own is provided in some schools. This is not more assigned homework, for that breeds greater dependence. The object is to free the student from the need of the teacher. Is that not what we desire of a mature graduate student who is capable

of carrying out a research project? Is it not our aim and our hope by graduation time for those who will have no further schooling? What then has delayed the process? Surely, we are not afraid of working ourselves out of a job!

7. *Students will have experience in relating ideas, concepts, and issues from different fields of knowledge.*

One of the interesting developments in the scholars' study of the structure of knowledge and the development of new content in schools and colleges is the integration of knowledge that is taking place. Algebra and geometry become part of understanding bigger ideas in mathematics. In fact, some secondary schools use the designation Mathematics I, II, III, and IV instead of the familiar subject identification. Note the interdisciplinary fields developing: biochemistry, cybernetics, space age technology, social psychology, and many others. The difference between subject matter lines becomes less distinct.

Seminars at the secondary school level relate ideas in psychology, literature, logic, semantics, and other areas. Classes for children with special disabilities have crossed the subject boundaries.

I would hazard a guess that such experiences will become available to more students as we learn how to deal with these golden opportunities. The key, I suspect, is in helping students to look at the issues and ideas using whatever information is pertinent, a concept that the core never was able to implement fully.

8. *Students will have opportunities in laboratories to increase their skills and understandings.*

These would be laboratories of various kinds: the natural laboratory of the community, of the shop, of the farm, of science, of research in industrial processes, of the Peace Corps type both abroad and at home, of the school community, of reading centers, of available centers of information, of instructional materials, and other kinds of laboratories where students can experiment, practice, or study, under only as much guidance as needed. The laboratory work in many instances would grow out of or relate to classroom work. I shall discuss only two in order to illustrate what I mean.

a. *Laboratory for study of human behavior.**

I doubt that we can afford any longer to leave to collegiate education much of the study of psychology, sociology, anthropology, and the general areas of human growth and development. The study of human behavior is the key to mental health, to human relationships which spell success or failure on a job, and to the solution of the conflicts among people whether on a local or international scale. Knowledge will be selected from the behavioral sciences, including those I have mentioned plus others, such as, economics, psychiatry, political science, and biology.

Children are already in school. We do not need to seek a place to observe and study children's behavior and growth. This kind of laboratory is furnished by any group that meets and works together, including the very classroom in which students meet.

But there may well be a place in the school in which students will have available written materials, audio-visual materials, research studies, and expert assistance to delve into these studies. I would visualize this as being a central focal point for studies in the other laboratories for the study of human behavior available in school and community.

b. *Laboratory for study of communication skills and international understanding.*

I envision this as consisting of laboratories existing in school and community. Whether it is one place or several makes little difference.

This type of laboratory would deal with a variety of communication skills and media, such as the language laboratory, television, communications and electronics systems, language skills, speech skills, and language of behavior. There will be opportunity through the laboratory not only to improve one's skills but also to do experimentation on communication problems and to study the nature and evolution of language. Language will be regarded

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in a broader perspective as a means to understanding the culture and problems facing new nations.

I would expect that the Peace Corps exchange idea would be practical for bringing native college students from other countries to the United States to serve as aids in laboratories of this nature. I could also see the laboratory as extending into foreign countries with the growing numbers of opportunities for exchange students. The phenomenal growth in possibilities for travel can make it quite common for the young American to have been abroad in the 1970's. The schools have a responsibility to educate these youth to be ambassadors of good will rather than obnoxious souvenir-hunters and thrill-seekers. Youth have already demonstrated they can carry this responsibility well when they feel they have a mission to perform for their country and for international neighborliness.

Exchange studies of other cultures is an idea that other countries might eagerly enter into, an arrangement that places no one on an inferior basis. A little imaginative thinking such as some private organizations and public secondary schools have been doing would make possible first-hand, fruitful communication with other cultures for a greater number of youth.

9. *Youth in school will be given experiences in service to others.*

This is one kind of general education experience that I have no hesitancy in stating is possible and practicable for all youth. Moreover, it is essential to counteract the every-man-for-himself, dog-eat-dog philosophy of "I'm out to get what's coming to me." Some of us can remember the phenomenon of American life called the "WPA attitude." The more impersonal we become in our relations with others in urban and suburban areas, the more this type of experience as a part of one's education to serve society becomes a necessity.

It was during World War II when some high schools gave credit for community service activities. In fact, this was a requirement in one school system. I was sorry to see that school drop the plan following the war, just as we drifted away from the idea

of conserving natural resources and went back to extravagance and litter-bugging. The other day I read a newspaper article about high school students who perform services without pay in working with elementary school teachers and with attendance offices. There is no dearth of service opportunities in hospitals, in institutions, in welfare organizations, in economically deprived areas. Service to mankind has been documented as one of the ideals of youth in the Peace Corps activities. The educational opportunity is also at our back door.

10. *The secondary school curriculum of the 1970's will use the community to provide some kind of work experience.*

Work experience for pay is complementary to service experience as a part of one's preparation for occupational life. For young people who will go into semi-skilled or skilled trades, cooperative arrangements will need to be worked out with unions and employers. We already have some good prototypes in distributive education and the diversified occupational program. The service occupations will gradually absorb a larger proportion of the adult population. Landscaping, care of children, household management (rather than maid's work), gardening, and other services required to run a middle-class home in a society that grows more affluent, and in which many women have careers of their own, will need large numbers of people. Today these are regarded as menial jobs. Perhaps the school is the institution that can help upgrade them and also change attitudes toward such jobs.

I am inclined to think that it would be desirable as a part of their education for all youth to earn some money, learn something about the world of work and get their hands dirty in service and distributive occupations, industrial processes, caretaking jobs in research laboratories, farming, forestry, home care, or the field of repair of household appliances. We still have not decided what to do with the summer months as far as education of children is concerned, although summer classes are on the increase. Might it not be well to use at least some of this time for youth to supplement their school studies by fruitful, planned work experiences?

SUMMARY

I began with certain premises about curriculum change and the assumption that the technological revolution will make the world for which we educate in the future quite different from the world of today. I asked the question: What kind of person will we need to educate in order to cope with change and this new world?

I have pointed out some of the imperatives for the curriculum of the 1970's. These are not fanciful dreams, for if you will search carefully, I am sure you will find each one of these ideas at least in embryonic form operating in some teacher's classes in some schools. If we want this kind of experience badly enough, it is not too early to begin working toward it now in our schools, in our communities, and in our classes. If we do, the odds are considerably better than chance that we will achieve these changes.

Appendix A

CRITERIA FOR SELECTING INNOVATIONS

1. Does the proposed program contribute to the purposes of the school system or unit?
2. Does it relate to the on-going studies or concerns of the faculty or the school system as a whole?
3. Can the school staff the proposed project with qualified personnel?
4. Is there some qualified person on the faculty who would be interested in giving the project leadership?
5. Is it within the capability of the staff in the school system?
6. Does it capitalize on some strengths we have within the faculty?
7. Is there time within the total commitment of the school to plan, develop, and put into effect the proposal?
8. Will the innovation be effectively evaluated?
9. Can we find out if the innovation will really make a difference in learning skills, attitudes, and values?
10. Will it provide teachers an opportunity to become more skillful evaluators?
11. Does it offer opportunity for widened participation of teachers, administrators, supervisors, community people, and scholars from the universities and colleges?
12. Will the school system have a significant part in determining how the project will operate?

13. Can we open channels of communication within the school system so that all schools will feel a part of the project?
14. Can we give the necessary in-service education to teachers who will participate in the innovation?
15. Are there ways of working with neighboring school systems, the state department of education, the universities, or the regional educational laboratory in the project?
16. Do we have sufficient time to consider the merits of the proposal before it is submitted?
17. Will the required housing, equipment, and materials be made available?
18. Can we build in demonstration at some point in the project if feasible and desirable?
19. Will the innovation give opportunity for inquiry, discovery, emphasis on meaning, examination of ideas, or participation?
20. Does it recognize the nature of the community in which we work?

Appendix B

WORKING WITH GROUPS AND INDIVIDUAL TEACHERS TO IMPROVE INSTRUCTION

I. GROUPS

Operating Principles	*Illustrative Practices*
1. Curriculum change is a change in people	Schedule in-service courses desired by teachers Originate curriculum changes with teacher participation Set up in-service programs before and concurrent with the adoption of a revised curriculum
2. Curriculum change involves a change in the human relations structure in the school	Give many kinds of opportunities for teachers to participate in professional group activities Analyze the kind of informal group decision-making that goes on in your school Substitute for the teacher on occasion Utilize for in-service education teachers who have attended institutes

Operating Principles	*Illustrative Practices*
3. The goals of group work should be clearly established	Review often the goals the group has decided upon Encourage a group studying the curriculum to change its goals if necessary Analyze with the group what suggested goals will mean by way of study State goals in specific terms
4. Group work for the improvement of instruction should focus on the problems of the people concerned	Accept all problems teachers list, helping them to decide as a group which ones to select Use open-ended questionnaire to uncover teachers' concerns for study Analyze problems into subtopics Encourage individual schools and teachers to use new materials, try out ideas, experiment
5. Group work involves cooperative decision-making and the acceptance of these group decisions by those in authority	Begin decision-making with more concrete immediate decisions Work as a member of a study group Use teacher leadership for committees and study groups Carry out all decisions made by faculty as a group, if at all possible

Operating Principles	*Illustrative Practices*
6. In group work, the individuals and their contributions are accepted as being of worth	Use an observer in group meetings At times analyze the group process yourself when a teacher serves as leader Accept beginning teachers' ideas and encourage them to participate Help teachers use group process evaluation with their classes
7. In-service education recognizes differences among teachers	Plan special group activities for beginning teachers Ask experienced teachers to lead such groups Plan in-service education program for school leaders Seek community and area resources for in-service education
8. Group study leads to tangible results	Have groups plan programs for new teachers Use child study of individual cases for which some plan of action is needed Produce and try out as they are being produced units of work or teacher-made instructional materials Use action research projects to improve instruction

Operating Principles	*Illustrative Practices*
9. Evaluation should be an integral part of curriculum study	Test in individual classrooms ideas being studied Help curriculum study groups gather pertinent data about pupils and the community Build evaluation into any group study conducted Develop some plan of continuously gathering data evaluation of curriculum study

ISSUES AND PROBLEMS

1. Should the supervisor ever set out deliberately to change teachers?
2. Does a program developed by an outside agency and adopted by a school, such as the new biology or physics programs, provide for recognizing a change in teachers?
3. How does a principal find out what the power structure is within the faculty?
4. Are goals established by a group of teachers for their curriculum study likely to be inconsequential or "respectable" so that they ought not be accepted or should they be pursued in any event?
5. Do teachers know what their problems are?
6. Should parents play a part in group study in making curriculum changes or should they be informed of those changes after they have been made?
7. What part should a beginning teacher play in curriculum study?
8. In cooperative policy-making will the vocal members of the faculty exercise too much control of the process?
9. To what extent should teachers participate in the selection of other school personnel?
10. Should leaders promote their own ideas in a group or wait for plans to evolve from the group?

11. How can a leader prevent an aggressive individual from monopolizing the time?
12. Should teachers be required to participate in group work or should it be voluntary on their part?
13. Should curriculum study always be that of the total faculty?
14. What should be the relationship of the local school in-service program and the courses offered by colleges or universities?
15. Is the influence of national curriculum programs detrimental or helpful to local curriculum improvement?

II. INDIVIDUAL TEACHERS

Operating Principles	*Illustrative Practices*
1. Group work on curriculum improvement is basic to assisting individual teachers in changing their procedures	Identify some instructional problems with teachers Form curriculum study groups or group to tackle selected problems
2. The assumption of mutual growth of all concerned is a significant factor in the improvement of instruction	Work in action research study with one or two interested teachers Select a topic for study such as a new trend on which principal and teachers work together in trying it out in classroom
3. As supervisors we cannot change people; we can only provide situations in which it is easier for them to change	Make time available in school day for group study Arrange classroom visitations with other teachers or schools Arrange for teachers to participate in classroom behavior study

Operating Principles	*Illustrative Practices*
	Secure funds for some desired experimentation Arrange for team teaching situation Help teachers solve their own problems
4. Supervision should focus on the strengths of the teacher and his development as a unique individual	Praise teachers for work well done Assign teachers responsibilities in accordance with their special competencies Arrange for teachers with special skills in music, science, art, languages, A-V aids, etc., to work as consultants to other teachers Use teachers as resource persons with other classes
5. The supervisor functions as a change agent who helps people evaluate themselves	Have teachers first rate themselves if school system has a required rating form Use these ratings as basis for a conference In conferences with teachers stress self-evaluation Determine teacher's purposes in classroom observation Have teacher record a class session on tape for self-analysis Teachers have pupils keep a log of day's work

Operating Principles	*Illustrative Practices*
6. Leadership is a service role	Provide secretarial help or teacher aides for teachers Keep at minimum requests for information Assist teachers in finding materials Be available to teachers Provide for demonstrations and films of teaching situations
7. Supervision stresses good human relations	Talk with teachers personally instead of writing notes to them Avoid use of sarcasm or ridicule Show interest in teachers' personally Be sensitive of teachers' feelings Place confidence in teachers
8. In leadership, the authority of competence is superior to the authority of status	Become informed in the field of curriculum Keep up scholarship in your own field Show beginning teacher by how you help him how to act with pupils
9. Supervision creates an atmosphere in which there is freedom to disagree	Accept teachers' statements in conferences as expressing their feelings and beliefs; do not debate them Encourage experimental projects Show value of other's opinions

Operating Principles	*Illustrative Practices*
10. The changing role of the teacher demands a change in ways of supervision	Discuss with individual teachers how they can best utilize their talents in using newer educational media Secure assistance of teachers in helping others Give teacher opportunity to work in a team teaching situation

ISSUES AND PROBLEMS

1. Does the rating of teachers result in the improvement of instruction or does it set up blocks to such improvement?
2. Should the supervisor take notes while visiting a classroom?
3. If a supervisor believes in the mutual growth principle, how does he act in an individual conference?
4. How far should a supervisor go in encouraging a teacher to be creative?
5. To what extent are teachers or pupils able to evaluate themselves objectively?
6. Can outside rating or evaluation of an individual be done in such a way that it is considered as a service by the individual himself?
7. Does unannounced classroom visitation serve as a means of improving instruction or is it a hindrance to such improvement?
8. Should teachers rate the supervisor?
9. What does a supervisor do that may be a barrier to the individual teacher's creativity?
10. What can the supervisor do to help the teacher make a transition to a new type of role?
11. How does a supervisor motivate a reluctant teacher to try anything new?
12. Should supervisors have administrative authority over teachers?

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